DECEMBER 1983 NUMBER 472 -- Part I

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part I

# Solar-Geophysical Data prompt reports

Data for November 1983, October 1983 & Late Data

Explanation of Data Reports Issued as Number 462 (Supplement) February 1983

**LATE DATA** **Pages 97-99**

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL GEOPHYSICAL DATA CENTER / BOULDER, COLORADO

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# Solar - Geophysical Data

## Part I (Prompt Reports)

NO. 472 DECEMBER 1983

DATA FOR
NOVEMBER 1983
OCTOBER 1983

**Michael A. Chinnery, Director**
**NATIONAL GEOPHYSICAL DATA CENTER**
**BOULDER, COLORADO**

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NUMBER 472

(Issued in Two Parts)

Editor:
Helen E. Coffey, Physicist

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

Staff:
John A. McKinnon, Physicist
Daniel C. Wilkinson, Physicist
Viola W. Miller, Physical Science Technician
Carol Weathers, Editorial Assistant
Charles T. Shanks, Draftsman

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*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in SOLAR-GEOPHYSICAL DATA, No. 461, Part II, pages 103-235.

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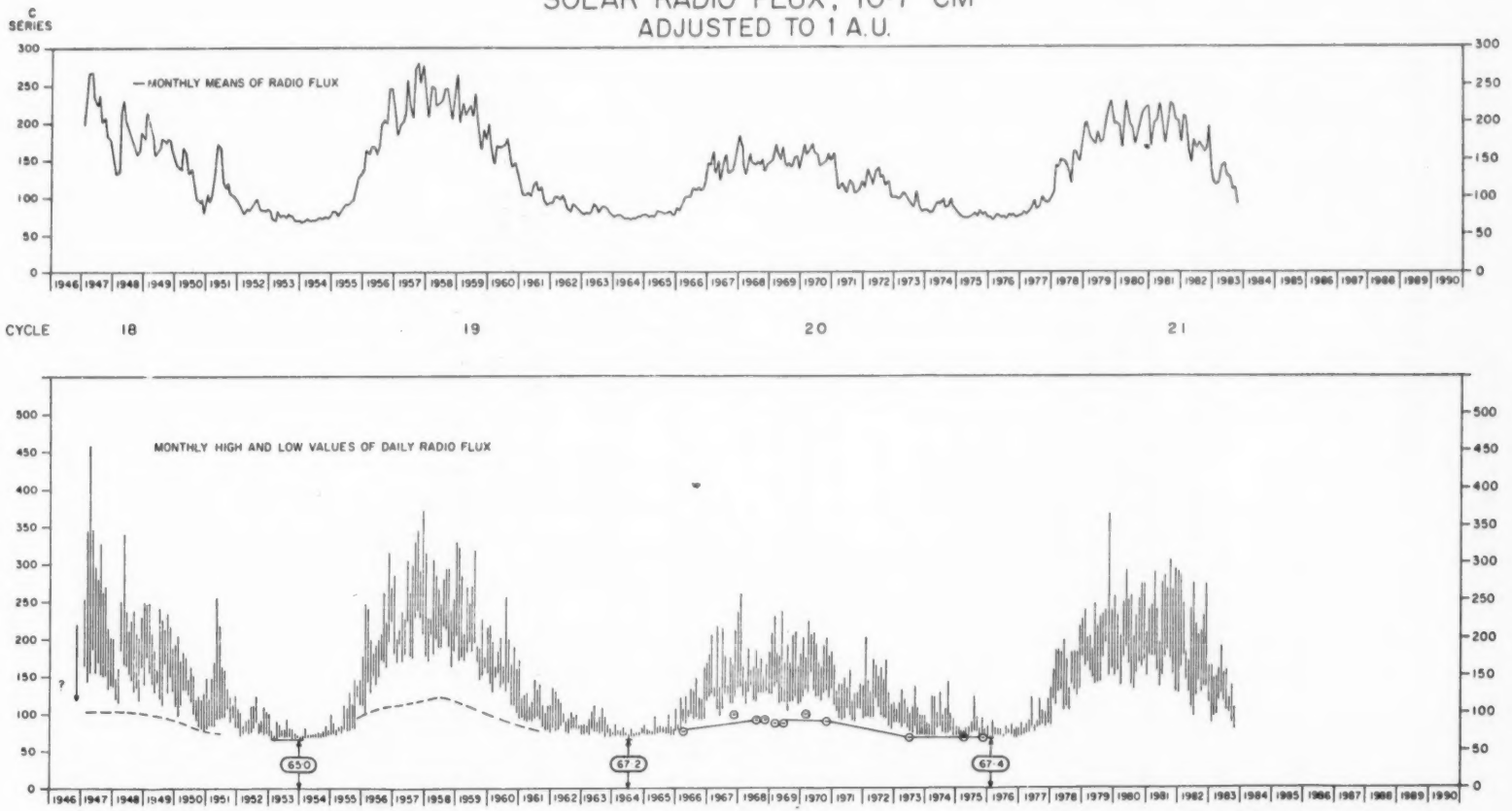
# SOLAR RADIO FLUX, 10·7 CM
## ADJUSTED TO 1 A.U.


C SERIES
MONTHLY MEANS OF RADIO FLUX
MONTHLY HIGH AND LOW VALUES OF DAILY RADIO FLUX
CYCLE 18 19 20 21
650
67·2
67·4
Vertical bars indicate high and low daily values within each month and define the slowly varying component of flux
Dashed curve approximately separates the flux associated with centers of activity from a quiet sun derived as the flux intercept for zero sunspot number in annual plots of daily flux versus sunspot number
Quiet solar flux derived from some radio cool regions on high resolution solar strip scans Such regions are associated with x-ray coronal holes
First and last appearance of this basic emission given by horizontal line. Radio minimum is determined by selecting a month with minimum values of the slowly varying component as well as the basic flux
Magnitude of the basic quiet sun obtained as the lowest daily flux value observed during minimum sunspot activity and indicated in cartouche at time indicated

**ALERT PERIODS**
**INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE**

SUMMARY OF THE GEOALERT MESSAGES NOVEMBER 1983

| NO | DI | DO | WOLF | 10CM | A | LOC | TOT | M | X | OUTSTANDING EVENTS | DA | LOC | DE | ALERTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 305 | 01 | 31 | 017 | 094 | 015 | S19W35 | 0 | 0 | 0 | | 01 | S19W35 | Q | SOLQUIET |
| | | | | | | | | | | | | | | MAGQUIET |
| 306 | 02 | 01 | 039 | 102 | 024 | S19W47 | 0 | 0 | 0 | PRESTO TENFLARE 110 FLUX UNITS | 02 | S19W47 | Q | SOLQUIET |
| | | | | | | S18E21 | 0 | 0 | 0 | 01/1121Z DURATION 23 MINUTES | | S18E21 | Q | MAGQUIET |
| | | | | | | N16E84 | 0 | 0 | 0 | | | N16E84 | Q | |
| 307 | 03 | 02 | 051 | 099 | 022 | S20W61 | 0 | 0 | 0 | | 03 | S20W61 | Q | SOLQUIET |
| | | | | | | S18E04 | 0 | 0 | 0 | | | S18E04 | Q | MAGQUIET |
| | | | | | | N16E70 | 0 | 0 | 0 | | | N16E70 | Q | |
| | | | | | | S15E80 | 0 | 0 | 0 | | | S15E80 | E | |
| 308 | 04 | 03 | 062 | 099 | 015 | S18W79 | 0 | 0 | 0 | | 04 | S18W79 | Q | SOLQUIET |
| | | | | | | S16W09 | 0 | 0 | 0 | | | S16W09 | Q | MAGQUIET |
| | | | | | | S19E56 | 0 | 0 | 0 | | | S19E56 | Q | |
| | | | | | | N16E57 | 0 | 0 | 0 | | | N16E57 | Q | |
| | | | | | | S16E65 | 3 | 0 | 0 | | | S16E65 | E | |
| 309 | 05 | 04 | 066 | 105 | 006 | S18E40 | 1 | 0 | 0 | | 05 | S18E40 | Q | SOLQUIET |
| | | | | | | N17E43 | 1 | 0 | 0 | | | N17E43 | Q | MAGQUIET |
| | | | | | | S16E50 | 0 | 0 | 0 | | | S16E50 | Q | |
| | | | | | | S09E66 | 1 | 0 | 0 | | | S09E66 | Q | |
| 310 | 06 | 05 | 092 | 107 | 005 | S10E10 | 0 | 0 | 0 | | 06 | S10E10 | Q | SOLQUIET |
| | | | | | | S18E27 | 0 | 0 | 0 | | | S18E27 | Q | MAGQUIET |
| | | | | | | N17E30 | 0 | 0 | 0 | | | N17E30 | Q | |
| | | | | | | S15E36 | 0 | 0 | 0 | | | S15E36 | E | |
| | | | | | | S10E54 | 3 | 0 | 0 | | | S10E54 | Q | |
| 311 | 07 | 06 | 092 | 106 | 004 | N08W30 | 0 | 0 | 0 | | 07 | N08W30 | Q | SOLQUIET |
| | | | | | | S10W06 | 0 | 0 | 0 | | | S10W06 | Q | MAGQUIET |
| | | | | | | S18E15 | 0 | 0 | 0 | | | S18E15 | Q | |
| | | | | | | N17E17 | 0 | 0 | 0 | | | N17E17 | Q | |
| | | | | | | S15E35 | 0 | 0 | 0 | | | S15E35 | Q | |
| | | | | | | S10E42 | 0 | 0 | 0 | | | S10E42 | Q | |
| 312 | 08 | 07 | 122 | 111 | 012 | S19W65 | 0 | 0 | 0 | | 08 | S19W65 | Q | SOLQUIET |
| | | | | | | S10W18 | 0 | 0 | 0 | | | S10W18 | Q | MAGALERT |
| | | | | | | S18E01 | 0 | 0 | 0 | | | S18E01 | Q | MINOR 08/10 |
| | | | | | | N17E03 | 0 | 0 | 0 | | | N17E03 | Q | |
| | | | | | | S15E10 | 0 | 0 | 0 | | | S15E10 | Q | |
| | | | | | | N26E21 | 0 | 0 | 0 | | | N26E21 | Q | |
| | | | | | | S10E27 | 6 | 0 | 0 | | | S10E27 | Q | |
| 313 | 09 | 08 | 107 | 106 | 025 | S11W31 | 0 | 0 | 0 | PRESTO TENFLARE 120 FLUX UNITS | 09 | S11W31 | Q | SOLQUIET |
| | | | | | | N17W12 | 0 | 0 | 0 | 08/1730Z DURATION 23 MINUTES | | N17W12 | Q | MAGALERT |
| | | | | | | S18W12 | 1 | 0 | 0 | | | S18W12 | Q | MINOR 09/10 |
| | | | | | | S15W02 | 7 | 1 | 0 | | | S15W02 | Q | |
| | | | | | | S10E15 | 4 | 0 | 0 | | | S10E15 | Q | |
| | | | | | | S19E52 | 0 | 0 | 0 | | | S19E52 | Q | |
| 314 | 10 | 09 | 075 | 101 | 037 | S18W26 | 0 | 0 | 0 | | 10 | S18W26 | Q | SOLQUIET |
| | | | | | | N17W24 | 0 | 0 | 0 | | | N17W24 | Q | MAGALERT |
| | | | | | | S15W15 | 0 | 0 | 0 | | | S15W15 | Q | MINOR 10/11 |
| | | | | | | S10E04 | 1 | 0 | 0 | | | S10E04 | E | |
| | | | | | | S19E38 | 0 | 0 | 0 | | | S19E38 | Q | |
| 315 | 11 | 10 | 103 | 103 | 021 | S12W57 | 1 | 0 | 0 | | 11 | S12W57 | Q | SOLQUIET |
| | | | | | | S18W39 | 0 | 0 | 0 | | | S18W39 | Q | MAGALERT |
| | | | | | | N17W36 | 0 | 0 | 0 | | | N17W36 | Q | MINOR 11/12 |
| | | | | | | S16W24 | 0 | 0 | 0 | | | S16W24 | Q | |
| | | | | | | S11W11 | 0 | 0 | 0 | | | S11W11 | Q | |
| | | | | | | S19E26 | 0 | 0 | 0 | | | S19E26 | Q | |
| 316 | 12 | 11 | 067 | 099 | 027 | S13W72 | 0 | 0 | 0 | | 12 | S13W72 | Q | SOLQUIET |
| | | | | | | S18W53 | 0 | 0 | 0 | | | S18W53 | Q | MAGALERT |

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES NOVEMBER 1983

| NO | DI | DO | WOLF | 10CM | A | LOC | TOT | M | X | OUTSTANDING EVENTS | DA | LOC | DE | ALERTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | N17W51 | 0 | 0 | 0 | | | N17W51 | Q | MINOR 12/13 |
| | | | | | | S11W26 | 0 | 0 | 0 | | | S11W26 | Q | |
| | | | | | | S19E13 | 0 | 0 | 0 | | | S19E13 | Q | |
| 317 | 13 | 12 | 080 | 092 | 028 | S13W83 | 0 | 0 | 0 | | 13 | S13W83 | Q | SOLQUIET |
| | | | | | | S18W66 | 0 | 0 | 0 | | | S18W66 | Q | MAGALERT |
| | | | | | | N09W64 | 0 | 0 | 0 | | | N09W64 | Q | MINOR 13/14 |
| | | | | | | S17W55 | 0 | 0 | 0 | | | S17W55 | Q | RECURRENCE |
| | | | | | | S12W41 | 1 | 0 | 0 | | | S12W41 | Q | |
| | | | | | | S19W00 | 1 | 0 | 0 | | | S19W00 | Q | |
| 318 | 14 | 13 | 062 | 094 | 028 | N16W78 | 0 | 0 | 0 | | 14 | N16W78 | Q | SOLQUIET |
| | | | | | | S17W77 | 0 | 0 | 0 | | | S17W77 | Q | MAGNIL |
| | | | | | | S12W53 | 0 | 0 | 0 | | | S12W53 | Q | |
| | | | | | | S13E09 | 0 | 0 | 0 | | | S13E09 | E | |
| | | | | | | S14E44 | 0 | 0 | 0 | | | S14E44 | Q | |
| 319 | 15 | 14 | 085 | 093 | 021 | S12W72 | 0 | 0 | 0 | | 15 | S12W72 | Q | SOLQUIET |
| | | | | | | S19W26 | 0 | 0 | 0 | | | S19W26 | Q | MAGALERT |
| | | | | | | S13W06 | 2 | 0 | 0 | | | S13W06 | Q | MINOR 16/XX |
| | | | | | | S06W02 | 0 | 0 | 0 | | | S06W02 | Q | RECURRENCE |
| | | | | | | S08E20 | 0 | 0 | 0 | | | S08E20 | Q | |
| | | | | | | S14E34 | 2 | 0 | 0 | | | S14E34 | Q | |
| 320 | 16 | 15 | 063 | 093 | 017 | S13W19 | 1 | 0 | 0 | | 16 | S13W19 | Q | SOLQUIET |
| | | | | | | S11E15 | 0 | 0 | 0 | | | S11E15 | Q | MAGALERT |
| | | | | | | S15E20 | 0 | 0 | 0 | | | S15E20 | Q | MINOR 16/XX |
| | | | | | | N22E29 | 0 | 0 | 0 | | | N22E29 | Q | RECURRENCE |
| 321 | 17 | 16 | 060 | 093 | 022 | S13W31 | 0 | 0 | 0 | | 17 | S13W31 | Q | SOLQUIET |
| | | | | | | S15E07 | 1 | 0 | 0 | | | S15E07 | Q | MAGALERT |
| | | | | | | N22E16 | 0 | 0 | 0 | | | N22E16 | Q | MINOR 17/XX |
| | | | | | | | | | | | | | | RECURRENCE |
| 322 | 18 | 17 | 037 | 088 | 029 | S13W45 | 0 | 0 | 0 | | 18 | S13W45 | Q | SOLQUIET |
| | | | | | | S16W10 | 0 | 0 | 0 | | | S16W10 | Q | MAGALERT |
| | | | | | | | | | | | | | | MINOR 18/19 |
| | | | | | | | | | | | | | | RECURRENCE |
| 323 | 19 | 18 | 040 | 086 | 023 | S13W58 | 3 | 0 | 0 | | 19 | S13W58 | Q | SOLQUIET |
| | | | | | | S15W21 | 1 | 0 | 0 | | | S15W21 | Q | MAGALERT |
| | | | | | | | | | | | | | | MINOR 19/20 |
| | | | | | | | | | | | | | | RECURRENCE |
| 324 | 20 | 19 | 033 | 084 | 015 | S13W72 | 0 | 0 | 0 | | 20 | S13W72 | Q | SOLQUIET |
| | | | | | | S15W55 | 0 | 0 | 0 | | | S15W55 | Q | MAGALERT |
| | | | | | | | | | | | | | | MINOR 20 |
| | | | | | | | | | | | | | | RECURRENCE |
| 325 | 21 | 20 | 000 | 082 | 018 | NO SPOTS VISIBLE | | | | | 21 | XXXXXX | | SOLQUIET |
| | | | | | | | | | | | | | | MAGNIL |
| 326 | 22 | 21 | 000 | 081 | 008 | NO SPOTS VISIBLE | | | | | 22 | XXXXXX | | SOLQUIET |
| | | | | | | | | | | | | | | MAGQUIET |
| 327 | 23 | 22 | 000 | 082 | 007 | NO SPOTS VISIBLE | | | | | 23 | XXXXXX | | SOLQUIET |
| | | | | | | | | | | | | | | MAGQUIET |
| 328 | 24 | 23 | 000 | 080 | 003 | NO SPOTS VISIBLE | | | | | 24 | XXXXXX | | SOLQUIET |
| | | | | | | | | | | | | | | MAGQUIET |
| 329 | 25 | 24 | 000 | 081 | 010 | NO SPOTS VISIBLE | | | | | 25 | XXXXXX | | SOLQUIET |
| | | | | | | | | | | | | | | MAGQUIET |
| 330 | 26 | 25 | 000 | 081 | 016 | NO SPOTS VISIBLE | | | | | 26 | XXXXXX | | SOLQUIET |
| | | | | | | | | | | | | | | MAGQUIET |

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SUMMARY OF THE GEOALERT MESSAGES NOVEMBER 1983

| NO | DI | DO | WOLF | 10CM | A | LOC | TOT | M | X | OUTSTANDING EVENTS | DA | LOC | DE | ALERTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 331 | 27 | 26 | 000 | 083 | 017 | NO SPOTS VISIBLE | | | | | 27 | XXXXXX | | SOLQUIET<br>MAGQUIET |
| 332 | 28 | 27 | 012 | 087 | 008 | N17E74 | 2 | 0 | 0 | | 28 | N17E74 | Q | SOLQUIET<br>MAGALERT<br>MINOR 28/30 |
| 333 | 29 | 28 | 030 | 089 | 013 | N17E59 | 1 | 0 | 0 | | 29 | N17E59 | Q | SOLQUIET |
| | | | | | | N11E77 | 0 | 0 | 0 | | | N11E77 | Q | MAGALERT<br>MINOR 29/30 |
| 334 | 30 | 29 | 033 | 092 | 018 | N18E46 | 2 | 0 | 0 | | 30 | N18E46 | Q | SOLQUIET |
| | | | | | | N10E64 | 0 | 0 | 0 | | | N10E64 | Q | MAGALERT<br>MINOR 30 |
| 335 | 01 | 30 | 035 | 093 | 020 | N18E32 | 0 | 0 | 0 | | 01 | N18E32 | Q | SOLQUIET |
| | | | | | | N11E51 | 1 | 0 | 0 | | | N11E51 | Q | MAGNIL |

NO=MESSAGE SERIAL NUMBER, DI=DATE OF ISSUE, DO=DATE OF OBSERVATION, WOLF=WOLF NUMBER, 10CM=10CM SOLAR FLUX, A=A INDEX, LOC=LOCATION LATITUDE AND LONGITUDE, TOT=TOTAL, M=NUMBER OF M FLARES, X=NUMBER OF X FLARES, DA=DATE OF FORECAST, DE=DESCRIPTION, Q=QUIET, E=ERUPTIVE, A=ACTIVE, P=PROTON

NOVEMBER 1983

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

01 NOVEMBER 1983 MEUDON 01/1336Z THREECM FLARE 01/1120Z 350 FLUX UNITS DURATION 25 MINUTES AT BERNE
02 NOVEMBER 1983 BOULDER 02/0210Z TENFLARE 110 FLUX UNITS 01/1121Z DURATION 23 MINUTES
08 NOVEMBER 1983 BOULDER 08/1753Z TENFLARE 120 FLUX UNITS 08/1730Z DURATION 12 MINUTES
09 NOVEMBER 1983 MEUDON 09/1300Z TENFLARE 120 FLUX UNITS 08/1730Z DURATION 12 MINUTES

## INTERNATIONAL* ($R_I$) RELATIVE SUNSPOT NUMBERS

| Day | 1982 Dec | 1983 Final Jan | Feb | Mar | Apr | May | Jun | 1983 Prov Jul | Aug | Sep | Oct | Nov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 88 | 60 | 103 | 109 | 53 | 114 | 61 | 62 | 131 | 46 | 32 | 17 |
| 02 | 125 | 65 | 85 | 93 | 70 | 104 | 72 | 59 | 128 | 56 | 51 | 25 |
| 03 | 132 | 55 | 88 | 86 | 61 | 94 | 73 | 61 | 105 | 59 | 63 | 37 |
| 04 | 137 | 63 | 94 | 93 | 53 | 85 | 68 | 87 | 103 | 69 | 74 | 51 |
| 05 | 137 | 82 | 82 | 113 | 36 | 95 | 77 | 80 | 79 | 81 | 65 | 66 |
| 06 | 174 | 103 | 71 | 88 | 49 | 88 | 85 | 79 | 47 | 78 | 75 | 68 |
| 07 | 175 | 109 | 72 | 77 | 64 | 92 | 104 | 74 | 60 | 72 | 87 | 84 |
| 08 | 184 | 126 | 63 | 68 | 59 | 98 | 100 | 82 | 70 | 72 | 99 | 90 |
| 09 | 152 | 100 | 39 | 74 | 59 | 110 | 100 | 69 | 69 | 74 | 106 | 70 |
| 10 | 166 | 83 | 26 | 55 | 64 | 114 | 86 | 59 | 63 | 77 | 108 | 68 |
| 11 | 171 | 90 | 21 | 49 | 69 | 101 | 73 | 68 | 88 | 65 | 130 | 56 |
| 12 | 194 | 77 | 18 | 32 | 65 | 114 | 66 | 86 | 103 | 41 | 122 | 47 |
| 13 | 172 | 89 | 11 | 12 | 64 | 132 | 72 | 85 | 101 | 36 | 100 | 40 |
| 14 | 160 | 92 | 10 | 24 | 64 | 125 | 88 | 88 | 97 | 36 | 75 | 29 |
| 15 | 166 | 77 | 24 | 44 | 53 | 130 | 92 | 92 | 93 | 42 | 72 | 28 |
| 16 | 140 | 89 | 17 | 63 | 54 | 99 | 84 | 93 | 80 | 38 | 61 | 38 |
| 17 | 118 | 102 | 22 | 74 | 63 | 93 | 79 | 96 | 72 | 35 | 60 | 31 |
| 18 | 102 | 86 | 32 | 88 | 75 | 99 | 78 | 98 | 71 | 45 | 63 | 36 |
| 19 | 79 | 93 | 33 | 82 | 110 | 88 | 103 | 96 | 54 | 40 | 46 | 26 |
| 20 | 63 | 81 | 32 | 82 | 90 | 105 | 117 | 101 | 40 | 32 | 26 | 13 |
| 21 | 87 | 74 | 39 | 87 | 87 | 110 | 117 | 109 | 52 | 38 | 18 | 13 |
| 22 | 88 | 73 | 33 | 70 | 83 | 104 | 136 | 114 | 50 | 38 | 22 | 0 |
| 23 | 96 | 59 | 40 | 66 | 91 | 102 | 143 | 95 | 51 | 42 | 22 | 0 |
| 24 | 100 | 58 | 50 | 60 | 92 | 111 | 122 | 105 | 44 | 46 | 20 | 0 |
| 25 | 122 | 75 | 67 | 48 | 123 | 98 | 122 | 85 | 52 | 45 | 18 | 0 |
| 26 | 116 | 77 | 70 | 70 | 118 | 100 | 110 | 58 | 56 | 50 | 22 | 0 |
| 27 | 126 | 75 | 88 | 72 | 126 | 85 | 92 | 49 | 51 | 46 | 12 | 8 |
| 28 | 120 | 89 | 98 | 48 | 146 | 68 | 83 | 40 | 55 | 48 | 11 | 12 |
| 29 | 98 | 99 | | 44 | 142 | 88 | 68 | 77 | 63 | 48 | 16 | 19 |
| 30 | 79 | 101 | | 54 | 137 | 68 | 63 | 89 | 59 | 33 | 15 | 24 |
| 31 | 69 | 110 | | 37 | | 60 | | 110 | 42 | | 19 | |
| Mean | 127 | 84 | 51 | 66 | 81 | 99 | 91 | 82 | 72 | 51 | 55 | 33 |

*International sunspot numbers have replaced the Zurich values since January 1981.
The yearly mean sunspot number equaled 115.9 in 1982.

## DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

| Day | Dec 82 | Jan 83 | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 167.8 | 131.4 | 162.6 | 145.4 | 100.7 | 142.0 | 131.3 | 124.1* | 151.1 | 110.5* | 117.5 | 98.3 |
| 02 | 166.3 | 131.4 | 156.5* | 138.7 | 101.2 | 145.4 | 139.0* | 125.4 | 145.4* | 110.9 | 120.4 | 97.6 |
| 03 | 181.6 | 136.2 | 145.5 | 141.0 | 101.4* | 139.4 | 139.3 | 131.5 | 139.4* | 106.4 | 123.1 | 96.9 |
| 04 | 194.5 | 138.2 | 156.8 | 143.7 | 100.8 | 132.9 | 149.2 | 137.2 | 136.5 | 110.5 | 125.1 | 103.1 |
| 05 | 195.9* | 154.6 | 154.3* | 146.6 | 98.7 | 130.8 | 167.9* | 132.1 | 136.5 | 117.6 | 126.6* | 105.1 |
| 06 | 210.4 | 161.6* | 152.3 | 139.3 | 99.5 | 125.8* | 191.4 | 132.4 | 142.0 | 120.7 | 132.7 | --- |
| 07 | 244.3 | 163.3 | 142.2 | 132.3 | 102.2 | 117.4 | 179.5 | 132.7 | 141.9 | 118.6 | 133.9 | 108.5 |
| 08 | 241.7* | 155.9* | 133.3 | 128.1 | 104.1* | 127.0 | 173.7 | 127.9 | 141.0 | 118.4 | 131.1* | 103.5 |
| 09 | 258.6 | 150.0 | 121.9 | 122.0 | 106.1 | 132.2* | 159.5* | 123.1 | 142.9 | 115.3 | 130.4 | 99.2 |
| 10 | 273.5* | 144.2 | 113.4 | 115.1 | 103.3 | 143.5* | 150.5* | 123.1 | 151.6 | 109.7 | 133.6* | 100.8 |
| 11 | 259.3* | 139.3 | 106.9 | 103.0 | 104.4 | 159.3* | 139.2 | 125.7 | 151.3 | 110.5 | 138.3 | 96.7 |
| 12 | 251.1 | 135.7 | 99.8 | 99.5* | 107.7 | 160.4* | 134.5 | 124.7 | 156.7* | 104.9* | 133.7 | 89.6 |
| 13 | 239.0 | 135.1 | 95.5 | 95.8 | 109.1 | 154.4 | 128.3 | 123.5 | 147.3 | 104.4 | 133.5* | 91.9 |
| 14 | 235.6 | 137.2 | 91.7 | 95.9 | 111.7 | 153.5* | 126.4* | 124.4 | 141.6* | 105.2 | 131.5* | 91.0 |
| 15 | 221.9 | 141.0 | 88.5 | 100.6* | 103.6 | 145.7 | 128.7 | 124.6 | 135.8* | 106.3* | 127.0 | 90.9 |
| 16 | 213.2* | 140.2 | 89.7 | 107.8 | 105.1 | 134.0* | 128.8* | 121.3 | 132.1 | 106.3* | 117.2A | 90.6 |
| 17 | 200.5* | 138.0 | 91.9 | 114.5 | 113.5 | 131.7* | 130.7 | 120.0 | 126.8 | 105.1 | 110.9* | 85.6 |
| 18 | 186.5 | 134.8 | 97.2 | 117.7 | 120.7 | 137.6 | 130.5 | 116.4* | 122.2 | 102.5 | 103.6 | 84.4 |
| 19 | 176.8* | 127.4 | 94.6 | 118.3 | 125.0 | 146.8 | 133.8 | 119.5 | 117.7 | 101.2 | 105.2 | 82.3 |
| 20 | 159.2 | 120.5 | 97.3 | 120.7 | 127.4 | 151.8* | 136.9 | 125.1 | 118.7 | 100.4 | 99.1 | 80.3 |
| 21 | 149.4 | 116.1 | 101.6 | 118.8* | 133.3 | 149.8 | 144.0 | 128.1* | 114.2 | 103.0 | 89.3 | 79.3 |
| 22 | 150.1* | 113.5 | 106.2 | 117.2 | 139.7 | 152.0 | 148.9 | 138.9 | 110.8 | 106.0 | 87.2 | 80.1 |
| 23 | 157.0* | 115.4 | 112.0 | 116.2 | 140.4 | 143.7 | 149.8 | 132.9* | 110.8 | 112.6 | 87.8 | 78.2 |
| 24 | 166.8 | 114.1 | 114.3 | 117.1 | 142.7 | 140.5 | 141.7* | 136.3* | 108.7 | 111.8 | 88.6 | 78.8 |
| 25 | 170.6 | 122.7 | 120.3 | 114.2* | 145.6 | 138.8 | 141.4 | 136.7* | 104.2 | 110.5* | 89.2 | 79.2 |
| 26 | 168.7 | 132.6 | 126.2 | 114.7* | 146.8 | 132.3 | 144.1A | 128.9* | 105.8 | 114.6* | 89.1 | 80.4 |
| 27 | 166.2 | 133.6 | 138.3 | 109.6 | 149.6 | 130.5 | 137.1 | 123.1 | 103.7 | 119.8 | 88.9 | 84.4 |
| 28 | 157.0 | 140.6 | 137.6 | 104.9 | 156.4* | 133.1 | 129.4* | 127.1 | 102.8 | 114.8 | 90.4 | 86.6 |
| 29 | 147.3 | 148.9 | | 98.9 | 148.4 | 139.0 | 128.9 | 138.5* | 105.7 | 114.5 | 90.7 | 89.4 |
| 30 | 142.5 | 154.8 | | 100.7 | 147.2 | 135.4* | 126.8 | 144.3 | 104.0 | 113.0 | 92.6 | 90.0 |
| 31 | 134.4 | 161.9 | | 98.7 | | 138.0* | | 153.1* | 104.2 | | 95.5* | |
| Mean | 193.2 | 137.7 | 119.6 | 117.3 | 119.9 | 140.2 | 143.0 | 129.1 | 127.5 | 110.2 | 111.7 | 90.4 |

A = interpolated value; --- = no observation.
*Adjusted for burst in progress at time of measurement.
The yearly mean 2800 MHz flux adjusted to 1 astronomical unit equaled 175.1 in 1982.

# DAILY SOLAR INDICES

NOVEMBER 1983

| Day | Julian Day | Bartels Cycle Day | Sunspot Numbers $R_I$ | Sunspot Numbers $R_A$ | Obs Flux Ottawa (2800) | Solar Flux Adjusted to 1 Astronomical Unit: SGMR (15400) | SGMR (8800) | SGMR (4995) | Ottawa (2800) | SGMR (2695) | SGMR (1415) | SGMR (606) | SGMR (410) | SGMR (245) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 306 | 15 | 17 | 15 | 99.8 | 581 | 262 | 130 | 98.3 | 88 | 87 | 76 | 31 | 16 |
| 02 | 307 | 16 | 25 | 25 | 99.2 | 577 | 261 | 130 | 97.6 | 90 | 85 | 77 | 32 | 15 |
| 03 | 308 | 17 | 37 | 39 | 98.5 | 565 | 263 | 133 | 96.9 | 90 | 86 | 82 | 32 | 17 |
| 04 | 309 | 18 | 51 | 51 | 104.9 | 558 | 266 | 136 | 103.1 | 95 | 89 | 72 | 32 | 18 |
| 05 | 310 | 19 | 66 | 60 | 106.9 | 508 | 238 | 127 | 105.1 | 95 | 88 | 82 | 32 | 17 |
| 06 | 311 | 20 | 68 | 76 | --- | 555 | 266 | 133 | --- | 94 | 94 | 78 | 31 | 15 |
| 07 | 312 | 21 | 84 | 87 | 110.5 | 588 | 264 | 138 | 108.5 | 102 | 99 | 83 | 33 | 19 |
| 08 | 313 | 22 | 90 | 82 | 105.5 | 585 | 258 | 132 | 103.5 | 99 | 97 | 82 | 32 | 18 |
| 09 | 314 | 23 | 70 | 64 | 101.1 | 570 | 252 | 127 | 99.2 | 84 | 92 | 76 | 30 | 15 |
| 10 | 315 | 24 | 68 | 65 | 102.9 | 580 | 261 | 132 | 100.8 | 86 | 92 | 77 | 31 | 14 |
| 11 | 316 | 25 | 56 | 46 | 98.7 | 555 | 264 | 129 | 96.7 | 89 | 86 | 72 | 31 | 17 |
| 12 | 317 | 26 | 47 | 33 | 91.5 | 577 | 263 | 126 | 89.6 | 83 | 84 | 75 | 29 | 15 |
| 13 | 318 | 27 | 40 | 26 | 93.9 | 577 | 265 | 123 | 91.9 | 84 | 80 | 71 | 29 | 14 |
| 14 | 319 | 1 | 29 | 30 | 93.0 | 568 | 268 | 125 | 91.0 | 81 | 83 | 73 | 29 | 14 |
| 15 | 320 | 2 | 28 | 30 | 92.9 | 576 | 263 | 125 | 90.9 | 85 | 76 | 71 | 28 | 15 |
| 16 | 321 | 3 | 38 | 33 | 92.6 | 550 | 245 | 120 | 90.6 | 66 | 76 | 70 | 30 | 15 |
| 17 | 322 | 4 | 31 | 30 | 87.6 | 564 | 258 | 120 | 85.6 | 90 | 73 | 71 | 29 | 15 |
| 18 | 323 | 5 | 36 | 32 | 86.4 | 578 | 258 | 120 | 84.4 | 75 | 72 | 69 | 28 | 16 |
| 19 | 324 | 6 | 26 | 25 | 84.3 | 572 | 253 | 116 | 82.3 | 85 | 71 | 67 | 27 | 15 |
| 20 | 325 | 7 | 13 | 1 | 82.3 | --- | --- | --- | 80.3 | -- | -- | -- | -- | -- |
| 21 | 326 | 8 | 13 | 0 | 81.3 | 558 | 252 | 116 | 79.3 | 83 | 69 | 67 | 28 | 13 |
| 22 | 327 | 9 | 0 | 0 | 82.2 | --- | --- | --- | 80.1 | -- | -- | -- | -- | -- |
| 23 | 328 | 10 | 0 | 0 | 80.2 | 600 | 258 | 116 | 78.2 | 89 | 77 | 73 | 30 | 18 |
| 24 | 329 | 11 | 0 | 0 | 80.9 | 524 | 251 | 114 | 78.8 | 82 | 68 | 66 | 29 | 15 |
| 25 | 330 | 12 | 0 | 0 | 81.3 | 433 | 221 | 108 | 79.2 | 75 | 66 | 65 | 29 | 15 |
| 26 | 331 | 13 | 0 | 0 | 82.5 | 565 | 255 | 116 | 80.4 | 78 | 68 | 58 | 26 | 14 |
| 27 | 332 | 14 | 8 | 4 | 86.7 | 564 | 255 | 116 | 84.4 | 80 | 71 | 69 | 29 | 16 |
| 28 | 333 | 15 | 12 | 14 | 89.0 | 534 | 257 | 121 | 86.6 | 83 | 76 | 68 | 30 | 15 |
| 29 | 334 | 16 | 19 | 18 | 91.9 | 562 | 254 | 122 | 89.4 | 85 | 77 | 64 | 33 | 16 |
| 30 | 335 | 17 | 24 | 16 | 92.6 | 575 | 260 | 123 | 90.0 | 91 | 78 | 79 | 32 | 16 |
| Mean | | | 33 | 30 | 92.5 | 561 | 257 | 124 | 90.4 | 86 | 81 | 73 | 30 | 16 |

*Adjusted for burst in progress at time of measurement.

The observed and the adjusted Ottawa fluxes tabulated above are the "Series C" daily values reported by the Algonquin Radio Observatory, Ottawa, Ontario, Canada. The letter "A" following an entry designates an interpolated flux. Numbers in parentheses in the column headings denote frequencies in MHz.

Equipment problems produced the gaps shown here in the Air Weather Service's Sagamore Hill (SGMR) observations.

The International and American sunspot numbers shown above are preliminary values.

# OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

NOVEMBER 1983

| Date | RELATIVE SUNSPOT NUMBERS: Zurich or International ($R_I$) Monthly Mean | Zurich or International ($R_I$) Smoothed | American ($R_A$) Monthly Mean | American ($R_A$) Smoothed | Derived ($R_S$) Monthly Mean | Derived ($R_S$) Smoothed | 2800 MHz RADIO FLUX Adjusted to 1 AU ($S_a$) Monthly Mean | 2800 MHz RADIO FLUX Adjusted to 1 AU ($S_a$) Smoothed |
|---|---|---|---|---|---|---|---|---|
| Dec 79 | 176.3 | 164 | 157.6 | 152 | 151.0 | 152 | 197.2 | 199 |
| Jan 80 | 159.6 | 164 | 145.3 | 153 | 153.6 | 154 | 199.6 | 200 |
| Feb | 155.0 | 163 | 133.9 | 154 | 148.7 | 155 | 195.1 | 200 |
| Mar | 126.2 | 161 | 107.9 | 153 | 117.8 | 153 | 166.5 | 200 |
| Apr | 164.1 | 159 | 138.5 | 151 | 164.0 | 152 | 209.3 | 198 |
| May | 179.7 | 156 | 172.3 | 149 | 185.4 | 151 | 229.1 | 197 |
| Jun | 157.3 | 155 | 153.6 | 149 | 153.2 | 151 | 199.3 | 198 |
| Jul | 136.3 | 153 | 136.0 | 144 | 144.1 | 151 | 190.8 | 197 |
| Aug | 135.4 | 150 | 133.0 | 144 | 121.9 | 150 | 170.3 | 196 |
| Sep | 155.0 | 150 | 150.0 | 146 | 138.8 | 152 | 185.9 | 198 |
| Oct | 164.7 | 150 | 160.8 | 149 | 157.1 | 154 | 202.9 | 200 |
| Nov | 147.9 | 148 | 149.9 | 149 | 168.5 | 153 | 213.4 | 199 |
| Dec | 174.4 | 143 | 167.5 | 145 | 174.3 | 150 | 218.8 | 196 |
| Jan 81 | 114.0 | 140 | 115.4 | 144 | 120.5 | 149 | 169.0 | 195 |
| Feb | 141.3 | 142 | 143.7 | 146 | 153.5 | 152 | 199.5 | 198 |
| Mar | 135.5 | 143 | 149.2 | 149 | 157.5 | 156 | 203.2 | 202 |
| Apr | 156.4 | 143 | 169.2 | 149 | 180.7 | 158 | 224.7 | 204 |
| May | 127.5 | 143 | 141.3 | 149 | 152.8 | 159 | 198.9 | 204 |
| Jun | 90.9 | 142 | 99.0 | 147 | 112.9 | 158 | 161.9 | 203 |
| Jul | 143.8 | 140 | 154.3 | 146 | 152.1 | 157 | 198.2 | 203 |
| Aug | 158.7 | 141 | 170.4 | 147 | 182.1 | 158 | 226.0 | 203 |
| Sep | 167.3 | 143 | 174.5 | 148 | 177.7 | 158 | 221.9 | 204 |
| Oct | 162.4 | 142 | 157.0 | 146 | 178.6 | 156 | 222.8 | 202 |
| Nov | 137.5 | 139 | 138.8 | 142 | 157.6 | 151 | 203.3 | 197 |
| Dec | 150.1 | 138 | 145.0 | 140 | 155.5 | 149 | 201.4 | 195 |
| Jan 82 | 111.1 | 137 | 110.4 | 139 | 124.2 | 148 | 173.4 | 195 |
| Feb | 163.6 | 133 | 161.0 | 134 | 163.6 | 144 | 208.9 | 191 |
| Mar | 153.8 | 129 | 155.5 | 130 | 163.0 | 139 | 208.3 | 186 |
| Apr | 122.0 | 124 | 121.9 | 124 | 113.9 | 134 | 162.9 | 182 |
| May | 82.2 | 120 | 82.6 | 120 | 97.7 | 129 | 147.9 | 177 |
| Jun | 110.4 | 117 | 113.5 | 118 | 129.6 | 127 | 177.4 | 175 |
| Jul | 106.1 | 115 | 113.3 | 117 | 116.0 | 125 | 164.8 | 174 |
| Aug | 107.6 | 109 | 110.5 | 111 | 123.9 | 120 | 172.1 | 168 |
| Sep | 118.8 | 101 | 117.8 | 103 | 118.5 | 112 | 167.1 | 161 |
| Oct | 94.7 | 96 | 90.1 | 97 | 111.8 | 106 | 160.9 | 155 |
| Nov | 98.1 | 95 | 93.2 | 95 | 114.8 | 103 | 163.7 | 153 |
| Dec | 127.0 | 95 | 145.0 | 95 | 146.7 | 101 | 193.2 | 151 |
| Jan 83 | 84.3 | 93* | 82.8 | 93 | 86.7 | 98 | 137.7 | 148 |
| Feb | 51.0 | 90* | 53.4 | 90 | 67.2 | 94 | 119.6 | 145 |
| Mar | 66.5 | 86* | 60.5 | 85 | 64.7 | 90 | 117.3 | 141 |
| Apr | 80.7 | 82* | 74.5 | 81 | 67.5 | 85 | 119.9 | 136 |
| May | 99.2 | 77* | 97.7 | **79** | 86.1 | 80 | 137.1 | 131 |
| Jun | 91.1 | **75( 4)*** | 93.1 | **76** | 92.4 | **78** | 143.0 | --- |
| Jul | 82.1† | **74( 6)*** | 82.2 | **75** | 77.4 | **77** | 129.1 | --- |
| Aug | 71.9† | **74( 9)*** | 69.2 | **74** | 75.7 | **77** | 127.5 | --- |
| Sep | 50.9† | **73(11)*** | 47.4 | **73** | 57.0 | **76** | 110.2 | --- |
| Oct | 55.2† | **73(13)*** | 52.3 | **74** | 58.6 | **76** | 111.7 | --- |
| Nov | 33.2† | **72(14)*** | --- | **74** | 35.6 | **76** | 90.4 | --- |
| Dec | --- | **71(15)*** | --- | **72** | --- | **75** | --- | --- |
| Jan 84 | --- | **70(16)*** | --- | **71** | --- | **74** | --- | --- |
| Feb | --- | **68(16)*** | --- | **69** | --- | **71** | --- | --- |
| Mar | --- | **64(18)*** | --- | **64** | --- | **66** | --- | --- |
| Apr | --- | **60(20)*** | --- | **60** | --- | **62** | --- | --- |
| May | --- | **58(22)*** | --- | **59** | --- | **60** | --- | --- |

*An asterisk marks either a value of the observed 12-month running mean or of a predicted 12-month average that is based in part on preliminary observations.

Boldface entries indicate predicted values and parentheses enclose the absolute value of the 90% confidence limits. All tabulated entries of the American sunspot number are final values. The two columns headed "Derived" represent a sunspot number computed from a linear regression equation between the 2800 MHz solar flux (adjusted to 1 astronomical unit) and the Zurich sunspot number.

†International numbers replaced the Zurich values in January 1981.

## SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

NOVEMBER 1983

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 | 15 | 13 | 12 | 13 | 13 | 12 | 13 | 14 | 14 | 13 | 14 | 15 |
| 1977 | 17 | 18 | 20 | 22 | 24 | 26 | 29 | 33 | 39 | 46 | 52 | 57 |
| 1978 | 61 | 65 | 70 | 77 | 83 | 89 | 97 | 104 | 108 | 111 | 113 | 118 |
| 1979 | 124 | 131 | 137 | 141 | 147 | 153 | 155 | 155 | 156 | 158 | 162 | 165* |
| 1980 | 164 | 163 | 161 | 159 | 156 | 155 | 153 | 150 | 150 | 150 | 148 | 143 |
| 1981 | 140 | 142 | 143 | 143 | 143 | 142 | 140 | 141 | 143 | 142 | 139 | 138 |
| 1982 | 137 | 133 | 129 | 124 | 119 | 117 | 115 | 109 | 101 | 96 | 95 | 95 |
| 1983 | 93 | 90 | 86 | 82 | 77 | 75 | 74 | 74 | 73 | 73 | 72 | 71 |
| | | | | | | ( 4) | ( 6) | ( 9) | (11) | (13) | (14) | (15) |
| 1984 | 70 | 68 | 64 | 60 | 58 | 57 | 56 | 54 | 52 | 49 | 47 | 44 |
| | (16) | (16) | (18) | (20) | (22) | (23) | (24) | (24) | (24) | (24) | (24) | (24) |
| 1985 | 43 | 41 | 41 | 40 | 38 | 36 | 34 | 33 | 32 | 32 | 31 | 31 |
| | (24) | (23) | (23) | (23) | (23) | (22) | (21) | (21) | (20) | (21) | (21) | (22) |
| 1986 | 30 | 29 | 28 | 26 | 24 | 22 | 20 | 18 | 18 | 17 | 17 | 16 |
| | (22) | (22) | (22) | (21) | (21) | (20) | (20) | (19) | (17) | (16) | (15) | (13) |

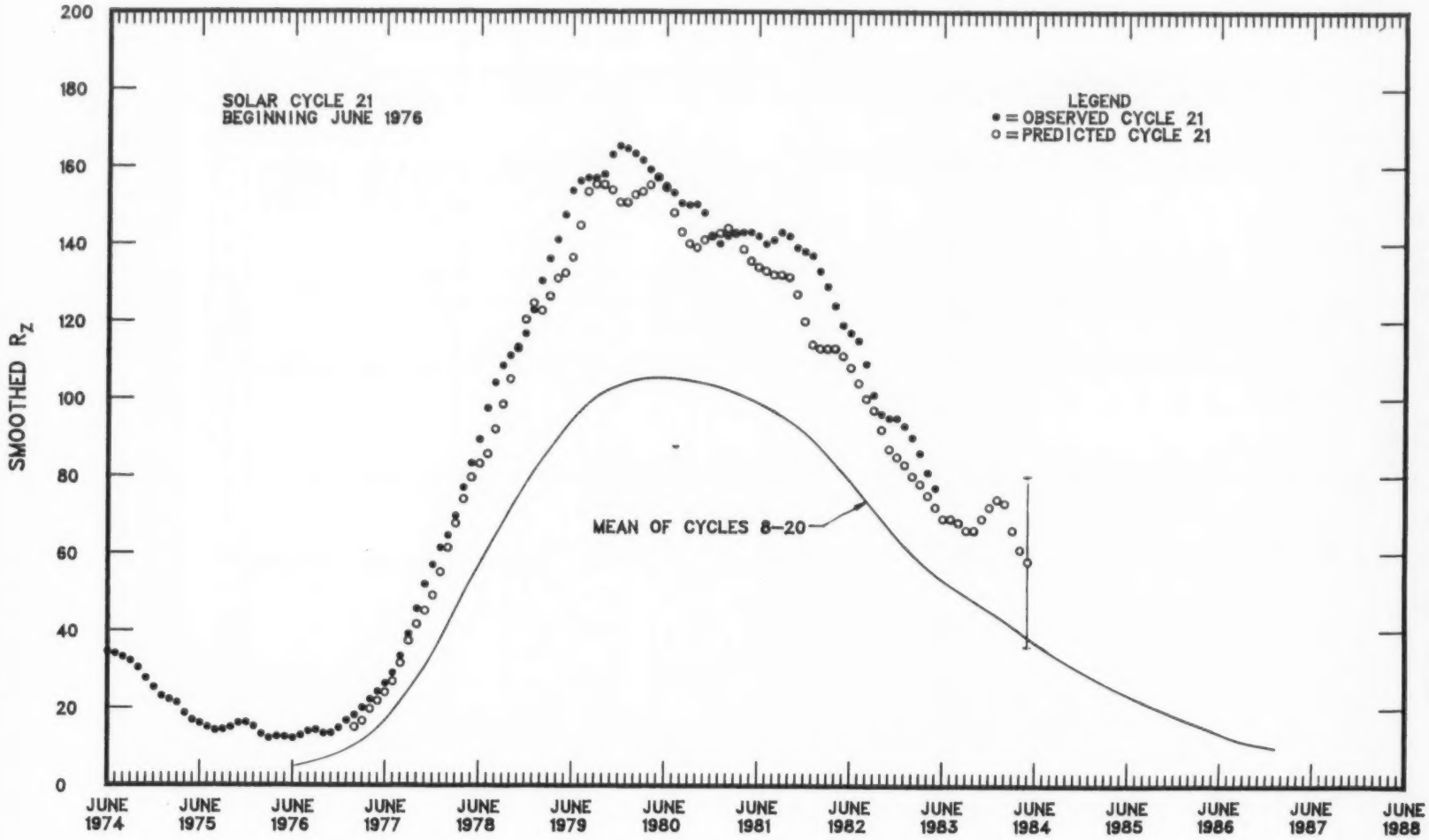
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through June 1983, and on provisional international numbers thereafter. Some table entries after the June 1976 value will change slightly, when we incorporate final data for 1983.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the February 1983 edition of the "Solar-Geophysical Data" supplement.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval. Consider, for example, the May 1984 prediction tabulated above. There exists a 90% chance that in May 1984 the actual smoothed sunspot number will fall somewhere between 36 and 80.

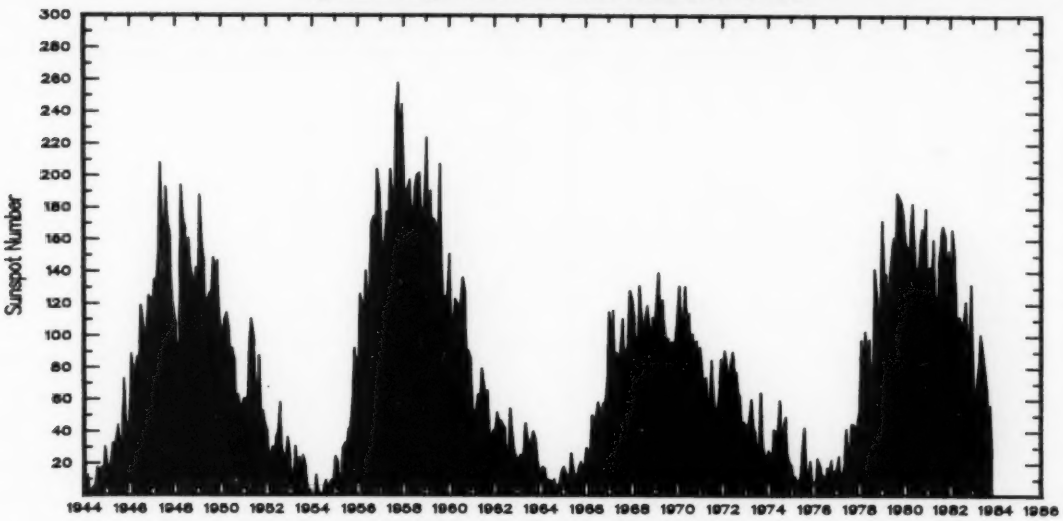
THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In "Solar-Geophysical Data," issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

# OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



# MONTHLY MEAN SUNSPOT NUMBERS
## January 1944 – November 1983




MONTHLY MEAN SUNSPOT NUMBERS

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1944 | 3.7 | 0.5 | 11.0 | 0.3 | 2.5 | 5.0 | 5.0 | 16.7 | 14.3 | 16.9 | 10.8 | 28.4 |
| 1945 | 18.5 | 12.7 | 21.5 | 32.0 | 30.6 | 36.2 | 42.6 | 25.9 | 34.9 | 68.8 | 46.0 | 27.4 |
| 1946 | 47.6 | 86.2 | 76.6 | 75.7 | 84.9 | 73.5 | 116.2 | 107.2 | 94.4 | 102.3 | 123.8 | 121.7 |
| 1947 | 115.7 | 133.4 | 129.8 | 149.8 | 201.3 | 163.9 | 157.9 | 188.8 | 169.4 | 163.6 | 128.0 | 116.5 |
| 1948 | 108.5 | 86.1 | 94.8 | 189.7 | 174.0 | 167.8 | 142.2 | 157.9 | 143.3 | 136.3 | 95.8 | 138.0 |
| 1949 | 119.1 | 182.3 | 157.5 | 147.0 | 106.2 | 121.7 | 125.8 | 123.8 | 145.3 | 131.6 | 143.5 | 117.6 |
| 1950 | 101.6 | 94.8 | 109.7 | 113.4 | 106.2 | 83.6 | 91.0 | 85.2 | 51.3 | 61.4 | 54.8 | 54.1 |
| 1951 | 59.9 | 59.9 | 55.9 | 92.9 | 108.5 | 100.6 | 61.5 | 61.0 | 83.1 | 51.6 | 52.4 | 45.8 |
| 1952 | 40.7 | 22.7 | 22.0 | 29.1 | 23.4 | 36.4 | 39.3 | 54.9 | 28.2 | 23.8 | 22.1 | 34.3 |
| 1953 | 26.5 | 3.9 | 10.0 | 27.8 | 12.5 | 21.8 | 8.6 | 23.5 | 19.3 | 8.2 | 1.6 | 2.5 |
| 1954 | 0.2 | 0.5 | 10.9 | 1.8 | 0.8 | 0.2 | 4.8 | 8.4 | 1.5 | 7.0 | 9.2 | 7.6 |
| 1955 | 23.1 | 20.8 | 4.9 | 11.3 | 28.9 | 31.7 | 26.7 | 40.7 | 42.7 | 58.5 | 89.2 | 76.9 |
| 1956 | 73.6 | 124.0 | 118.4 | 110.7 | 136.6 | 116.6 | 129.1 | 169.6 | 173.2 | 155.3 | 201.3 | 192.1 |
| 1957 | 165.0 | 130.2 | 157.4 | 175.2 | 164.6 | 200.7 | 187.2 | 158.0 | 235.8 | 253.8 | 210.9 | 239.4 |
| 1958 | 202.5 | 164.9 | 190.7 | 196.0 | 175.3 | 171.5 | 191.4 | 200.2 | 201.2 | 181.5 | 152.3 | 187.6 |
| 1959 | 217.4 | 143.1 | 185.7 | 163.3 | 172.0 | 168.7 | 149.6 | 199.6 | 145.2 | 111.4 | 124.0 | 125.0 |
| 1960 | 146.3 | 106.0 | 102.2 | 122.0 | 119.6 | 110.2 | 121.7 | 134.1 | 127.2 | 82.8 | 89.6 | 85.6 |
| 1961 | 57.9 | 46.1 | 53.0 | 61.4 | 51.0 | 77.4 | 70.2 | 55.9 | 63.6 | 37.7 | 32.6 | 40.0 |
| 1962 | 38.7 | 50.3 | 45.6 | 46.4 | 43.7 | 42.0 | 21.8 | 21.8 | 51.3 | 39.5 | 26.9 | 23.2 |
| 1963 | 19.8 | 24.4 | 17.1 | 29.3 | 43.0 | 35.9 | 19.6 | 33.2 | 38.8 | 35.3 | 23.4 | 14.9 |
| 1964 | 15.3 | 17.7 | 16.5 | 8.6 | 9.5 | 9.1 | 3.1 | 9.3 | 4.7 | 6.1 | 7.4 | 15.1 |
| 1965 | 17.5 | 14.2 | 11.7 | 6.8 | 24.1 | 15.9 | 11.9 | 8.9 | 16.8 | 20.1 | 15.8 | 17.0 |
| 1966 | 28.2 | 24.4 | 25.3 | 48.7 | 45.3 | 47.7 | 56.7 | 51.2 | 50.2 | 57.2 | 57.2 | 70.4 |
| 1967 | 110.9 | 93.6 | 111.8 | 69.5 | 86.5 | 67.3 | 91.5 | 107.2 | 76.8 | 88.2 | 94.3 | 126.4 |
| 1968 | 121.8 | 111.9 | 92.2 | 81.2 | 127.2 | 110.3 | 96.1 | 109.3 | 117.2 | 107.7 | 86.0 | 109.8 |
| 1969 | 104.4 | 120.5 | 135.8 | 106.8 | 120.0 | 106.0 | 96.8 | 98.0 | 91.3 | 95.7 | 93.5 | 97.9 |
| 1970 | 111.5 | 127.8 | 102.9 | 109.5 | 127.5 | 106.8 | 112.5 | 93.0 | 99.5 | 86.6 | 95.2 | 83.5 |
| 1971 | 91.3 | 79.0 | 60.7 | 71.8 | 57.5 | 49.8 | 81.0 | 61.4 | 50.2 | 51.7 | 63.2 | 82.2 |
| 1972 | 61.5 | 88.4 | 80.1 | 63.2 | 80.5 | 88.0 | 76.5 | 76.8 | 64.0 | 61.3 | 41.6 | 45.3 |
| 1973 | 43.4 | 42.9 | 46.0 | 57.7 | 42.4 | 39.5 | 23.1 | 25.6 | 59.3 | 30.7 | 23.9 | 23.3 |
| 1974 | 27.6 | 26.0 | 21.3 | 40.3 | 39.5 | 36.0 | 55.8 | 33.6 | 40.2 | 47.1 | 25.0 | 20.5 |
| 1975 | 18.9 | 11.5 | 11.5 | 5.1 | 9.0 | 11.4 | 28.2 | 39.7 | 13.9 | 9.1 | 19.4 | 7.8 |
| 1976 | 8.1 | 4.3 | 21.9 | 18.8 | 12.4 | 12.2 | 1.9 | 16.4 | 13.5 | 20.6 | 5.2 | 15.3 |
| 1977 | 16.4 | 23.1 | 8.7 | 12.9 | 18.6 | 38.5 | 21.4 | 30.1 | 44.0 | 43.8 | 29.1 | 43.2 |
| 1978 | 51.9 | 93.6 | 76.5 | 99.7 | 82.7 | 95.1 | 70.4 | 58.1 | 138.2 | 125.1 | 97.9 | 122.7 |
| 1979 | 166.6 | 137.5 | 138.0 | 101.5 | 134.4 | 149.5 | 159.4 | 142.2 | 188.4 | 186.2 | 183.3 | 176.3 |
| 1980 | 159.6 | 155.0 | 126.2 | 164.1 | 179.9 | 157.3 | 136.3 | 135.4 | 155.0 | 164.7 | 147.9 | 174.4 |
| 1981 | 114.0 | 141.3 | 135.5 | 156.4 | 127.5 | 90.9 | 143.8 | 158.7 | 167.3 | 162.4 | 137.5 | 150.1 |
| 1982 | 111.2 | 163.6 | 153.8 | 122.0 | 82.2 | 110.4 | 106.1 | 107.6 | 118.8 | 94.7 | 98.1 | 127.0 |
| 1983 | 84.3 | 51.0 | 66.5 | 80.7 | 99.2 | 91.1 | 82.1* | 71.9* | 50.9* | 55.2* | 33.2* | |

*Provisional

# H - ALPHA SOLAR FLARES

NOVEMBER 1983

| Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp Opt | Imp Xray | See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent ($10^{-6}$ Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOES | 01 | 1100 | 1133 | 1217 | | | | | | 77 | | M 3.1 | | | | | | |
| GOES | 02 | 0436 | 0442 | 0449 | | | | | | 13 | | B 7.8 | | | | | | |
| GOES | 02 | 0750 | 0803 | 0807 | | | | | | 17 | | B 7.2 | | | | | | |
| GOES | 02 | 1238 | 1244 | 1250 | | | | | | 12 | | C 1.1 | | | | | | |
| GOES | 02 | 1339 | 1342 | 1344 | | | | | | 5 | | B 4.1 | | | | | | |
| GOES | 02 | 1949 | 1952 | 1957 | | | | | | 8 | | B 3.7 | | | | | | |
| LEAR | 03 | 0221 | 0229 | 0236 | S18 | E76 | 4353 | 11 | 8.9 | 15 | SF | C 1.8 | 3 | C | | 16 | | |
| GOES | 03 | 0312 | 0318 | 0322 | | | | | | 10 | | B 6.1 | | | | | | |
| GOES | 03 | 0829 | 0832 | 0834 | | | | | | 5 | | B 3.9 | | | | | | |
| GOES | 03 | 0916 | 0919 | 0926 | | | | | | 10 | | B 4.2 | | | | | | |
| GOES | 03 | 0945 | 0948 | 0950 | | | | | | 5 | | C 1.4 | | | | | | |
| GOES | 03 | 1055 | 1058 | 1100 | | | | | | 5 | | C 5.4 | | | | | | |
| GOES | 03 | 1613 | 1617 | 1620 | | | | | | 7 | | B 3.7 | | | | | | |
| GOES | 03 | 1625 | 1629 | 1632 | | | | | | 7 | | B 5.5 | | | | | | |
| GOES | 03 | 1702 | 1705 | 1707 | | | | | | 5 | | B 3.6 | | | | | | |
| HOLL | 03 | 1855 | 1857 | 1900 | S13 | E63 | 4353 | 11 | 8.5 | 5 | SF | | 3 | C | | 11 | | |
| HOLL | 03 | 2007 | 2008 | 2016 | S15 | E66 | 4353 | 11 | 8.8 | 9 | SF | | 3 | C | | 14 | | |
| LEAR | 03 | 2236 | 2237 | 2254 | N21 | E71 | | 11 | 9.4 | 18 | SF | | 3 | C | | 13 | | |
| LEAR | 04 | 0039 | 0039 | 0046 | N25 | E76 | | 11 | 9.9 | 7 | SF | B 4.0 | 3 | C | | 15 | | |
| GOES | 04 | 0152 | 0155 | 0157 | | | | | | 5 | | B 4.3 | | | | | | |
| PEKG | 04 | 0215 | 0220 | 0225 | N25 | E73 | | 11 | 9.7 | 10 | SN | | | C | 0220 | 55 | | E |
| LEAR | 04 | 0220E | 0222 | 0224 | N23 | E79 | | 11 | 10.2 | 4D | SF | | 3 | C | | 55 | | |
| PEKG | 04 | 0255 | 0305 | 0315 | N15 | E54 | | 11 | 8.2 | 20 | SN | | | C | 0305 | 101 | 1.8 | E |
| LEAR | 04 | 0304 | 0304 | 0312 | N15 | E54 | 4352 | 11 | 8.2 | 8 | SF | | 3 | C | | 33 | | |
| GOES | 04 | 0319 | 0326 | 0328 | | | | | | 9 | | B 4.2 | | | | | | |
| GOES | 04 | 0359 | 0402 | 0405 | | | | | | 6 | | B 6.4 | | | | | | |
| GOES | 04 | 0534 | 0537 | 0541 | | | | | | 7 | | B 7.0 | | | | | | |
| LEAR | 04 | 0551 | 0552 | 0556 | S18 | E51 | 4354 | 11 | 8.1 | 5 | SF | B 5.6 | 3 | C | | 17 | | |
| GOES | 04 | 1819 | 1828 | 1835 | | | | | | 16 | | B 7.7 | | | | | | |
| GOES | 04 | 1957 | 2004 | 2010 | | | | | | 13 | | C 2.9 | | | | | | |
| GOES | 04 | 2050 | 2054 | 2058 | | | | | | 8 | | B 7.0 | | | | | | |
| LEAR | 05 | 0239 | 0239 | 0242 | S10 | E69 | 4355 | 11 | 10.3 | 3 | SF | B 3.0 | 3 | C | | 16 | | |
| LEAR | 05 | 0412 | 0413 | 0432 | S11 | E66 | 4355 | 11 | 10.1 | 20 | 1B | C 3.8 | 3 | C | | 148 | | F |
| PEKG | 05 | 0414 | 0415 | 0424 | S09 | E66 | | 11 | 10.1 | 10 | 1N | C 3.8 | | C | 0415 | 176 | | F |
| GOES | 05 | 0523 | 0531 | 0642 | | | | | | 79 | | B 5.9 | | | | | | |
| GOES | 05 | 0621 | 0625 | 0628 | | | | | | 7 | | B 3.0 | | | | | | |
| GOES | 05 | 0736 | 0740 | 0746 | | | | | | 10 | | B 4.4 | | | | | | |
| GOES | 05 | 0905 | 0910 | 0914 | | | | | | 9 | | B 3.1 | | | | | | |
| GOES | 05 | 1139 | 1143 | 1145 | | | | | | 6 | | B 3.1 | | | | | | |
| RAMY | 05 | 1259 | 1303 | 1307 | S09 | E62 | 4355 | 11 | 10.2 | 8 | SF | | 3 | C | | 25 | | |
| GOES | 05 | 1305 | 1310 | 1319 | | | | | | 14 | | B 3.9 | | | | | | |
| GOES | 05 | 1421 | 1426 | 1434 | | | | | | 13 | | B 3.5 | | | | | | |
| GOES | 05 | 1606 | 1612 | 1616 | | | | | | 10 | | B 7.9 | | | | | | |
| GOES | 05 | 1810 | 1814 | 1823 | | | | | | 13 | | B 3.8 | | | | | | |
| GOES | 05 | 1846 | 1855 | 1912 | | | | | | 26 | | B 6.0 | | | | | | |
| GOES | 06 | 1748 | 1754 | 1800 | | | | | | 12 | | B 4.2 | | | | | | |
| GOES | 06 | 2158 | 2202 | 2205 | | | | | | 7 | | B 3.9 | | | | | | |
| LEAR | 07 | 0534 | 0534 | 0549 | S11 | E43 | 4355 | 11 | 10.5 | 15 | SF | | 3 | C | | 23 | | F |
| GOES | 07 | 1038 | 1047 | 1051 | | | | | | 13 | | C 1.4 | | | | | | |
| RAMY | 07 | 1737 | 1737 | 1828 | S10 | E36 | 4355 | 11 | 10.4 | 51 | SB | C 1.8 | 3 | C | | 87 | | FE |
| HOLL | 07 | 1737 | 1737 | 1738D | S09 | E31 | 4355 | 11 | 10.1 | 1D | SB | | 3 | C | | 68 | | |
| HOLL | 07 | 1737 | 1737 | 1740D | S10 | E35 | 4355 | 11 | 10.4 | 3D | SB | C 1.8 | 3 | C | | 68 | | |
| HOLL | 07 | 1831 | 1842 | 1937 | S10 | E34 | 4355 | 11 | 10.3 | 66 | SB | C 1.8 | 3 | C | | 64 | | |
| RAMY | 07 | 1833 | 1842 | 1938 | S10 | E35 | 4355 | 11 | 10.4 | 65 | SB | C 1.8 | 3 | C | | 63 | | FE |
| HOLL | 07 | 1957 | 2002 | 2044 | S11 | E34 | 4355 | 11 | 10.4 | 47 | SB | C 5.9 | 3 | C | | 85 | | FEK |
| HOLL | 07 | 1957 | 2020 | 2044 | S11 | E34 | 4355 | 11 | 10.4 | 47 | SN | | 3 | C | | 93 | | K |
| HOLL | 07 | 2047 | 2048 | 2052 | S11 | E34 | 4355 | 11 | 10.4 | 5 | SN | | 3 | C | | 26 | | |
| HOLL | 07 | 2113 | 2115 | 2125 | S11 | E33 | 4355 | 11 | 10.4 | 12 | SF | | 3 | C | | 20 | | |
| HOLL | 07 | 2131 | 2141 | 2347D | S11 | E32 | 4355 | 11 | 10.3 | 136D | SB | | 3 | C | | 71 | | K |
| HOLL | 07 | 2131 | 2200 | 2347D | S11 | E32 | 4355 | 11 | 10.3 | 136D | SB | C 6.6 | 3 | C | | 150 | | ZUK |
| LEAR | 07 | 2236E | 2310 | 0007 | S11 | E33 | 4355 | 11 | 10.4 | 91D | SF | | 3 | C | | 165 | | FH |
| GOES | 07 | 2300 | 2304 | 2331 | | | 4355 | | | 31 | | C 1.3 | | | | | | |
| LEAR | 08 | 0022 | 0024 | 0041 | S17 | E13 | 4353 | 11 | 9.0 | 19 | SF | | 3 | C | | 28 | | |
| LEAR | 08 | 0046 | 0048 | 0114 | S12 | E33 | 4355 | 11 | 10.5 | 28 | SN | C 2.0 | 3 | C | | 93 | | |

# H - ALPHA SOLAR FLARES

NOVEMBER 1983

| Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (Min) | Imp Opt | Imp Xray | See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent ($10^{-6}$ Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEAR | 08 | 0126 | 0134 | 0142 | S11 | E31 | 4355 | 11 | 10.4 | 16 | SF | | 3 | C | | 23 | | |
| LEAR | 08 | 0143 | 0155 | 0238 | S16 | E11 | 4353 | 11 | 8.9 | 55 | 1N | C 3.2 | 3 | C | | 283 | | F |
| LEAR | 08 | 0217 | 0220 | 0228 | S10 | E30 | 4355 | 11 | 10.3 | 11 | SF | C 1.9 | 3 | C | | 49 | | F |
| LEAR | 08 | 0347 | 0404 | 0435 | S11 | E29 | 4355 | 11 | 10.3 | 48 | SN | | 3 | C | | 59 | | K |
| LEAR | 08 | 0347 | 0428 | 0435 | S11 | E29 | 4355 | 11 | 10.3 | 48 | SN | C 1.7 | 3 | C | | 69 | | FEK |
| LEAR | 08 | 0514 | 0518 | 0610 | S15 | E09 | 4353 | 11 | 8.9 | 56 | 1N | C 1.7 | 3 | C | | 264 | | |
| LEAR | 08 | 0638 | 0639 | 0643 | S16 | W05 | 4354 | 11 | 7.9 | 5 | SF | | 3 | C | | 33 | | F |
| LEAR | 08 | 0818 | 0819 | 0837 | S17 | E09 | 4353 | 11 | 9.0 | 19 | SF | B 6.6 | 3 | C | | 46 | | F |
| BUCA | 08 | 0819 | 0820 | 0833 | S16 | E06 | | 11 | 8.8 | 14 | SN | B 6.6 | | C | 0820 | 86 | .9 | E |
| RAMY | 08 | 1155E | 1157 | 1213 | S15 | E05 | 4353 | 11 | 8.9 | 18D | SN | B 4.7 | 3 | C | | 102 | | F |
| GOES | 08 | 1501 | 1506 | 1510 | | | | | | 9 | | B 9.7 | | | | | | |
| HOLL | 08 | 1546 | 1549 | 1558 | S14 | E02 | 4353 | 11 | 8.8 | 12 | SF | | 3 | C | | 20 | | F |
| GOES | 08 | 1646 | 1652 | 1657 | | | | | | 11 | | B 8.2 | | | | | | |
| RAMY | 08 | 1718 | 1735 | 2033 | S14 | E01 | 4353 | 11 | 8.8 | 195 | 1B | M 1.3 | 3 | C | | 339 | | UEK |
| RAMY | 08 | 1718 | 1746 | 2033 | S14 | E01 | 4353 | 11 | 8.8 | 195 | 2B | | 3 | C | | 548 | | K |
| HOLL | 08 | 1722 | 1722 | 2026 | S14 | E01 | 4353 | 11 | 8.8 | 184 | SN | | 3 | C | | 48 | | K |
| HOLL | 08 | 1722 | 1738 | 2026 | S14 | E01 | 4353 | 11 | 8.8 | 184 | 1B | | 3 | C | | 398 | | UK |
| GOES | 08 | 2159 | 2205 | 2215 | | | | | | 16 | | B 8.0 | | | | | | |
| GOES | 08 | 2308 | 2313 | 2318 | | | | | | 10 | | C 3.5 | | | | | | |
| GOES | 09 | 0954 | 0958 | 1001 | | | | | | 7 | | B 3.9 | | | | | | |
| GOES | 09 | 1135 | 1138 | 1140 | | | | | | 5 | | B 3.1 | | | | | | |
| GOES | 09 | 1156 | 1159 | 1201 | | | | | | 5 | | B 3.1 | | | | | | |
| GOES | 09 | 1530 | 1533 | 1535 | | | | | | 5 | | B 2.7 | | | | | | |
| HOLL | 09 | 1609 | 1609 | 1613 | S11 | E11 | 4355 | 11 | 10.5 | 4 | SN | B 6.2 | 3 | C | | 44 | | |
| GOES | 10 | 0538 | 0542 | 0545 | | | | | | 7 | | B 4.8 | | | | | | |
| HOLL | 10 | 1747 | 1807 | 1828 | S11 | W54 | 4357 | 11 | 6.7 | 41 | SF | | 3 | C | | 29 | | |
| GOES | 11 | 0945 | 0957 | 1002 | | | | | | 17 | | B 5.3 | | | | | | |
| HOLL | 11 | 1956 | 2005 | 2015 | S15 | W39 | 4353 | 11 | 8.9 | 19 | SF | | 3 | C | | 37 | | F |
| LEAR | 12 | 0218 | 0218 | 0241 | S21 | E14 | 4359 | 11 | 13.2 | 23 | SF | B 2.8 | 3 | C | | 33 | | |
| PEKG | 12 | 0219 | 0224 | 0240 | S20 | E14 | | 11 | 13.2 | 21 | SN | | | C | 0224 | 113 | 1.3 | E |
| LEAR | 12 | 0545 | 0545 | 0549 | S08 | W31 | 4355 | 11 | 9.9 | 4 | SF | B 2.6 | 3 | C | | 31 | | |
| GOES | 13 | 0354 | 0357 | 0400 | | | | | | 6 | | B 1.9 | | | | | | |
| GOES | 13 | 1216 | 1225 | 1238 | | | | | | 22 | | B 3.9 | | | | | | |
| GOES | 13 | 2338 | 2342 | 2345 | | | | | | 7 | | B 1.8 | | | | | | |
| PEKG | 14 | 0141 | 0142 | 0145 | S15 | E45 | | 11 | 17.5 | 4 | SF | | | C | 0142 | 59 | .9 | E |
| GOES | 14 | 0645 | 0659 | 0715 | | | | | | 30 | | B 9.2 | | | | | | |
| RAMY | 14 | 1434 | 1434 | 1439 | S13 | W02 | 4360 | 11 | 14.5 | 5 | SN | B 2.1 | 3 | C | | 32 | | |
| GOES | 14 | 1526 | 1529 | 1535 | | | | | | 9 | | B 1.8 | | | | | | |
| RAMY | 14 | 1720 | 1722 | 1739 | S14 | W02 | 4360 | 11 | 14.6 | 19 | SN | B 5.6 | 3 | C | | 64 | | HK |
| RAMY | 14 | 1720 | 1729 | 1739 | S14 | W02 | 4360 | 11 | 14.6 | 19 | SN | | 3 | C | | 74 | | K |
| RAMY | 14 | 1747 | 1748 | 1757 | S14 | E36 | 4361 | 11 | 17.5 | 10 | SF | | 3 | C | | 26 | | |
| PALE | 14 | 2035 | 2046 | 2050 | S14 | E35 | 4361 | 11 | 17.5 | 15 | SF | | 3 | C | | 26 | | |
| GOES | 15 | 0044 | 0047 | 0049 | | | | | | 5 | | B 1.8 | | | | | | |
| GOES | 15 | 0126 | 0130 | 0133 | | | | | | 7 | | B 2.7 | | | | | | |
| GOES | 15 | 1711 | 1716 | 1723 | | | | | | 12 | | B 2.4 | | | | | | |
| HOLL | 15 | 2041 | 2043 | 2100 | S12 | W17 | 4360 | 11 | 14.6 | 19 | SN | B 2.8 | 3 | C | | 20 | | F |
| GOES | 15 | 2153 | 2156 | 2201 | | | | | | 8 | | B 1.9 | | | | | | |
| ISTA | 16 | 0740 | | 0830 | S13 | W09 | | 11 | 15.6 | 50 | 1N | | | | | | | U |
| GOES | 16 | 0856 | 0900 | 0905 | | | | | | 9 | | B 1.9 | | | | | | |
| GOES | 16 | 1234 | 1240 | 1252 | | | | | | 18 | | B 1.9 | | | | | | |
| HOLL | 16 | 1901 | 1904 | 1950 | S14 | E08 | 4361 | 11 | 17.4 | 49 | SN | B 3.7 | 3 | C | | 32 | | FH |
| PALE | 16 | 1905 | 1921U | 1938 | S14 | E08 | 4361 | 11 | 17.4 | 33 | SF | | 3 | C | | 172 | | |
| GOES | 16 | 2234 | 2338 | 2340 | | | | | | 66 | | B 1.9 | | | | | | |
| GOES | 17 | 0311 | 0314 | 0319 | | | | | | 8 | | B 1.7 | | | | | | |
| PALE | 17 | 2314 | 0106 | 0130 | S14 | W47 | 4360 | 11 | 14.4 | 136 | SF | | 3 | C | | 76 | | F |
| LEAR | 18 | 0041 | 0042 | 0049 | S13 | W48 | 4360 | 11 | 14.4 | 8 | SF | B 2.8 | 3 | C | | 63 | | F |
| LEAR | 18 | 0059 | 0106 | 0120 | S14 | W48 | 4360 | 11 | 14.4 | 21 | SF | B 5.0 | 3 | C | | 51 | | F |
| GOES | 18 | 0158 | 0204 | 0210 | | | | | | 12 | | B 6.4 | | | | | | |
| GOES | 18 | 0201 | 0204 | 0211 | | | | | | 10 | | B 6.2 | | | | | | |
| GOES | 18 | 0432 | 0438 | 0444 | | | | | | 12 | | B 2.1 | | | | | | |
| GOES | 18 | 0515 | 0518 | 0520 | | | | | | 5 | | B 1.3 | | | | | | |

# H - ALPHA SOLAR FLARES

NOVEMBER 1983

| Sta | Day | Start (UT) | Max (UT) | End (UT) | Lat | CMD° | NOAA/ USAF Region | CMP Mo | CMP Day | Dur (MIn) | Imp Opt | Imp Xray | See | Obs Type | Area Measurement Time (UT) | Area Measurement Apparent ($10^{-6}$ Disk) | Area Measurement Corr (Sq Deg) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEAR | 18 | 0919 | 0919 | 0932 | S12 | W52 | 4360 | 11 | 14.5 | 13 | SN | B 1.6 | 3 | C | | 39 | | |
| RAMY | 18 | 1515 | 1515 | 1524 | S14 | W15 | 4361 | 11 | 17.5 | 9 | SF | | 3 | C | | 21 | | |
| GOES | 19 | 2100 | 2104 | 2114 | | | | | | 14 | | B 1.5 | | | | | | |
| GOES | 20 | 1210 | 1357 | 1409 | | | | | | 119 | | B 1.6 | | | | | | |
| GOES | 20 | 1352 | 1356 | 1403 | | | | | | 11 | | B 1.5 | | | | | | |
| GOES | 20 | 1520 | 1525 | 1530 | | | | | | 10 | | B 1.4 | | | | | | |
| GOES | 20 | 1858 | 1918 | 1940 | | | | | | 42 | | B 2.5 | | | | | | |
| HOLL | 20 | 1904 | 1904 | 1922 | S11 | W74 | 4360 | 11 | 15.2 | 18 | SF | | 3 | C | | 14 | | F |
| HOLL | 21 | 1533 | 1533 | 1538 | S13 | W54 | 4361 | 11 | 17.6 | 5 | SF | B 2.4 | 3 | C | | 42 | | F |
| GOES | 21 | 2124 | 2143 | 2149 | | | | | | 25 | | B 4.6 | | | | | | |
| GOES | 24 | 1833 | 1838 | 1845 | | | | | | 12 | | B 1.1 | | | | | | |
| HOLL | 27 | 1509E | 1512U | 1522 | N17 | E79 | | 12 | 3.6 | 13D | SF | | 3 | C | | 11 | | |
| RAMY | 27 | 1728 | 1730 | 1736 | N21 | E78 | | 12 | 3.7 | 8 | SF | | 3 | C | | 17 | | |
| RAMY | 27 | 1743 | 1751 | 1757 | N19 | E76 | | 12 | 3.5 | 14 | SF | | 3 | C | | 22 | | |
| HOLL | 27 | 2254 | 2254 | 2259 | N17 | E72 | 4366 | 12 | 3.4 | 5 | SF | B 1.9 | 3 | C | | 14 | | |
| HOLL | 27 | 2321 | 2321 | 2330 | N17 | E69 | 4366 | 12 | 3.2 | 9 | SF | | 3 | C | | 18 | | |
| LEAR | 27 | 2322 | 2322 | 2325 | N18 | E72 | 4366 | 12 | 3.5 | 3 | SF | | 2 | C | | 12 | | |
| LEAR | 28 | 0022 | 0022 | 0027 | N18 | E71 | 4366 | 12 | 3.4 | 5 | SF | | 3 | C | | 19 | | |
| GOES | 28 | 0607 | 0610 | 0612 | | | | | | 5 | | B 2.5 | | | | | | |
| GOES | 28 | 0949 | 0953 | 0955 | | | | | | 6 | | B 4.8 | | | | | | |
| GOES | 28 | 1058 | 1101 | 1103 | | | | | | 5 | | B 3.5 | | | | | | |
| GOES | 28 | 1357 | 1401 | 1404 | | | | | | 7 | | B 2.2 | | | | | | |
| GOES | 28 | 2355 | 2358 | 0001 | | | | | | 6 | | B 7.3 | | | | | | |
| GOES | 29 | 1029 | 1034 | 1042 | | | | | | 13 | | B 3.3 | | | | | | |
| RAMY | 29 | 1141 | 1141 | 1155 | N19 | E54 | 4366 | 12 | 3.6 | 14 | SF | B 2.5 | 3 | C | | 46 | | F |
| HOLL | 29 | 1742 | 1749 | 1803 | N20 | E51 | 4366 | 12 | 3.6 | 21 | SF | B 4.8 | 3 | C | | 28 | | F |
| GOES | 29 | 2309 | 2314 | 2318 | | | | | | 9 | | B 2.5 | | | | | | |
| RAMY | 30 | 1450 | 1450 | 1504 | N13 | E56 | 4367 | 12 | 4.8 | 14 | SF | B 2.3 | 3 | C | | 16 | | |

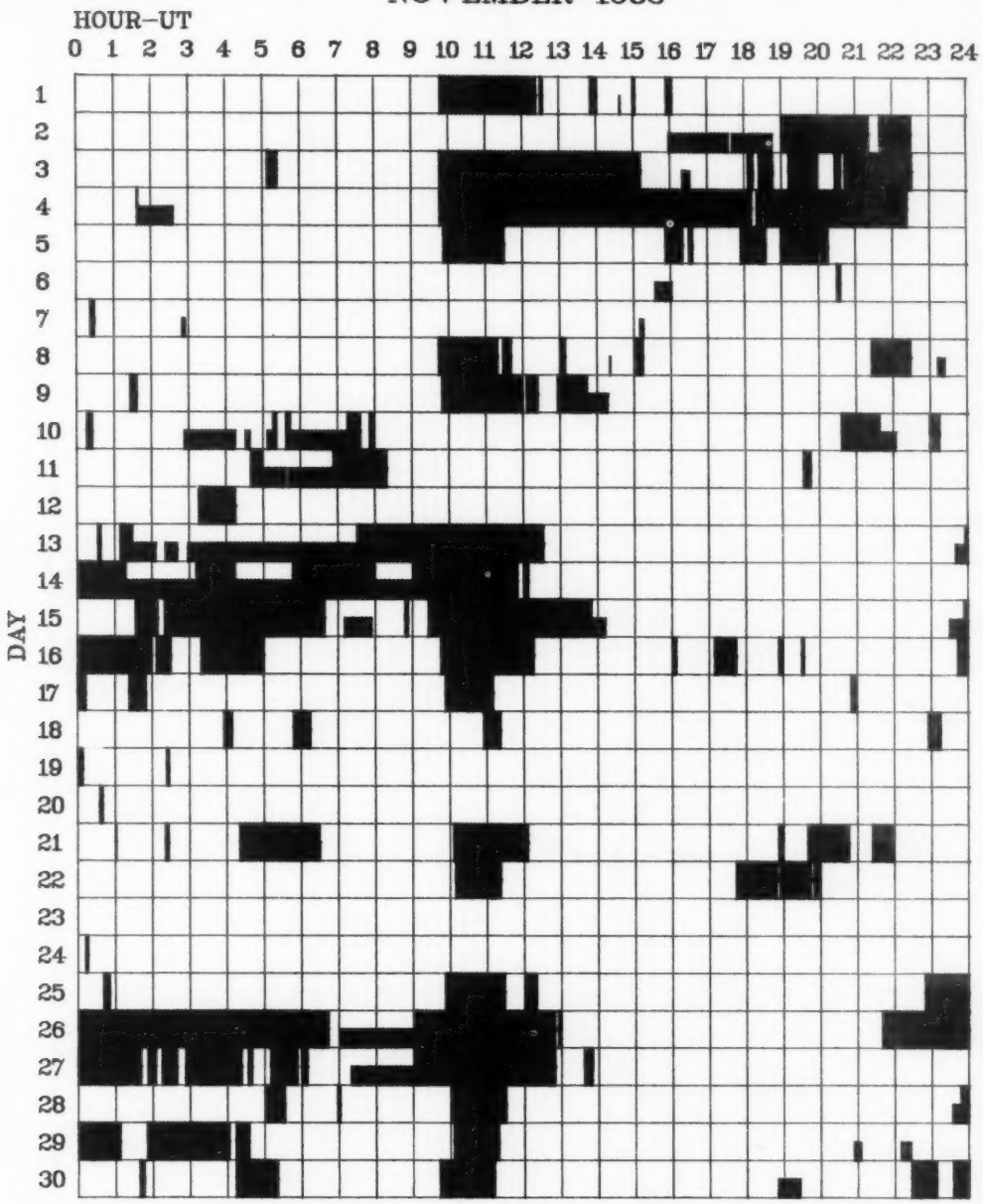
"Remarks":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of Ca II.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: Important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

# INTERVALS OF NO FLARE PATROL OBSERVATION

## FOR PRECEDING SOLAR FLARE TABLE

## NOVEMBER 1983




Observatories included in total patrol:

| | | | | |
|---|---|---|---|---|
| Bucharest | Holloman | Istanbul | Palehua | Ramey |
| | | Learmonth | Peking | Wendelstein |

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

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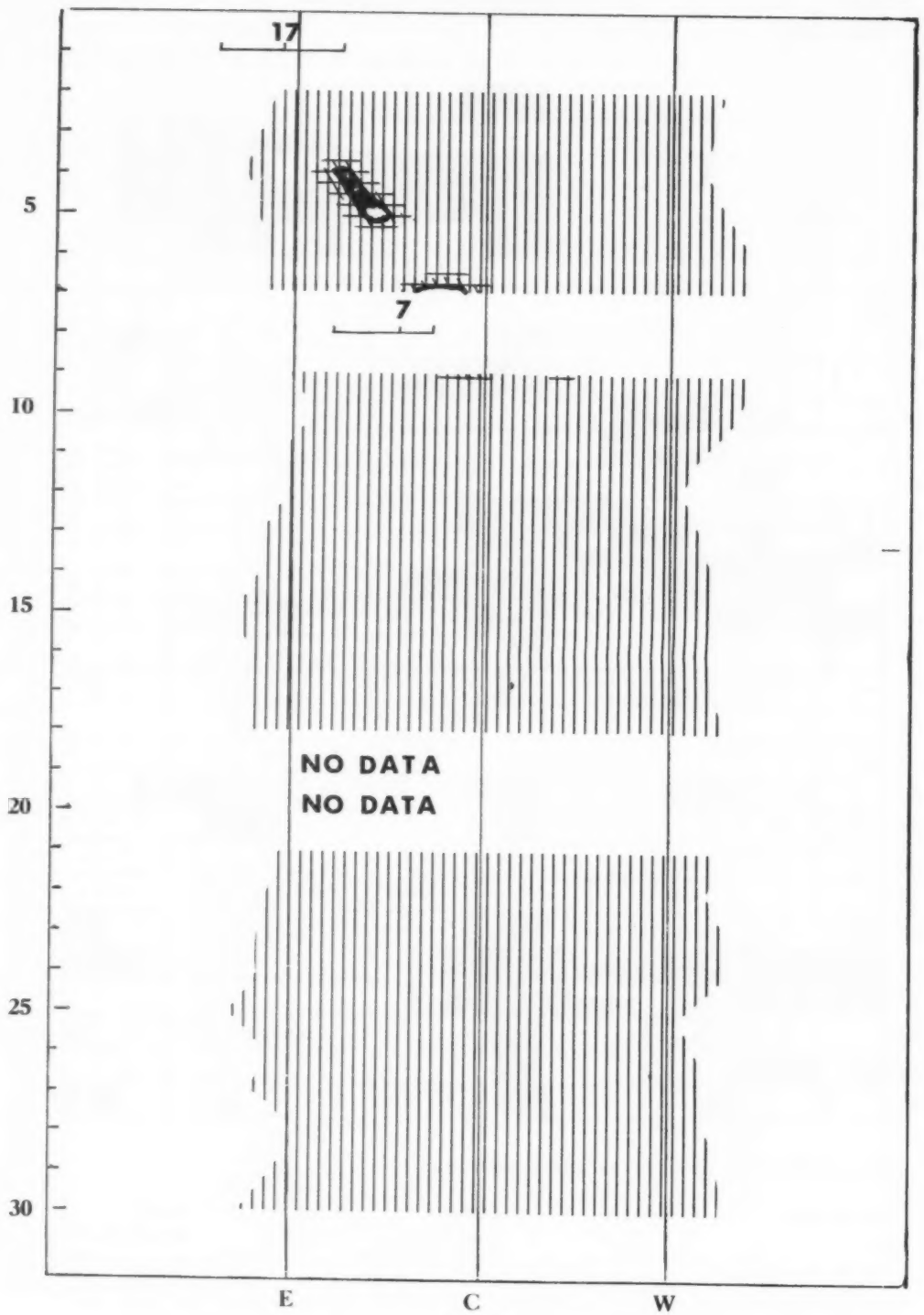
Nov 83

# SOLAR RADIO EMISSION
# INTERFEROMETRIC OBSERVATION

NOVEMBER 1983

Nançay

169 MHz

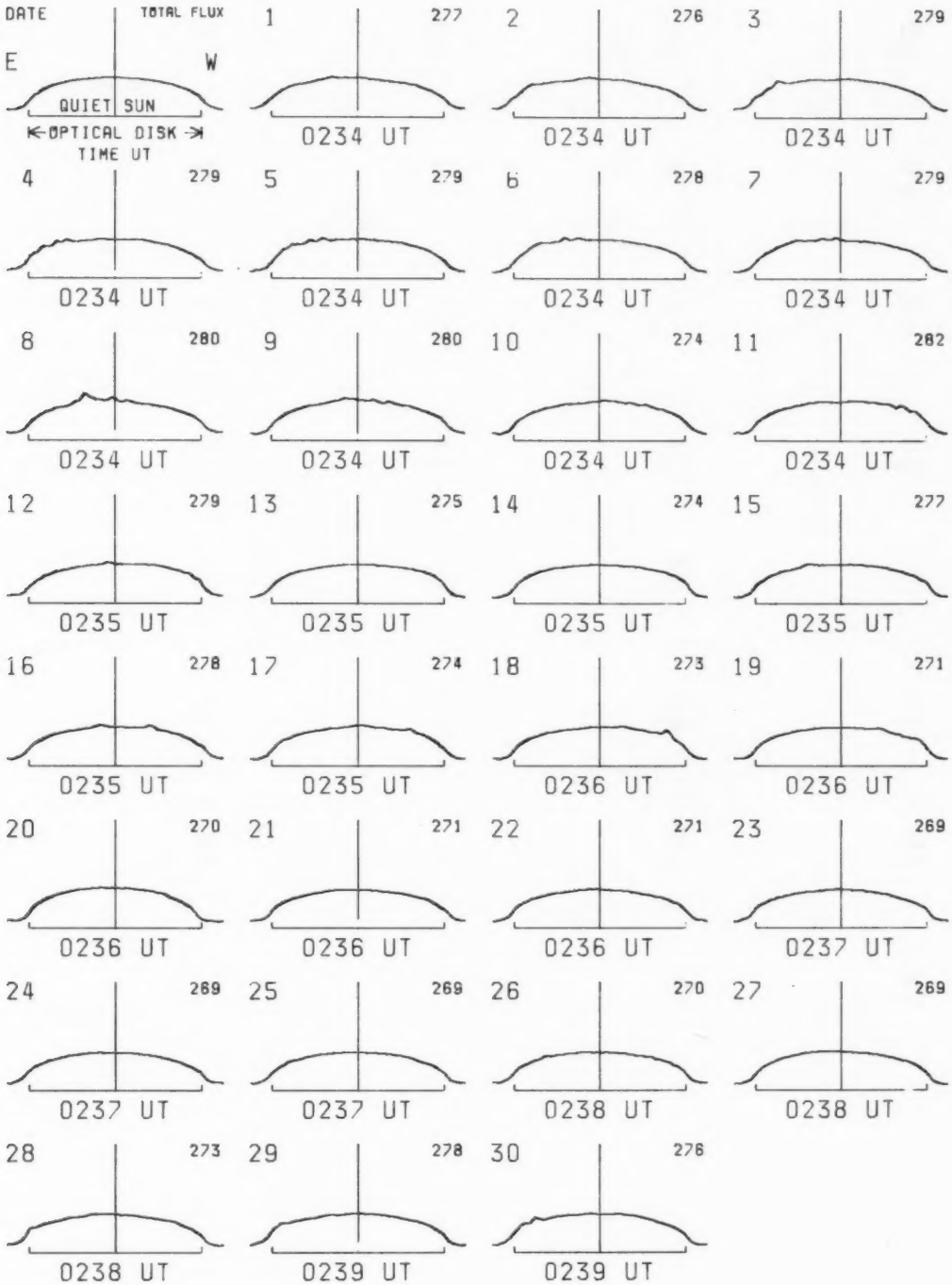


# EAST-WEST SOLAR SCANS

## NOVEMBER 1983

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



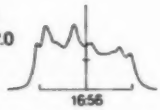
20
Nov 83

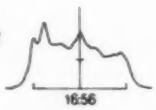
# EAST-WEST SOLAR SCANS

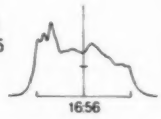
## NOVEMBER 1983

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

**01** 102.0



**02** 99.2


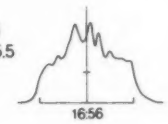

**03** 98.5


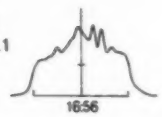

**04** 104.9
NO DATA

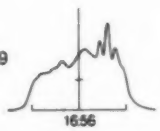
**05** 106.9
NO DATA

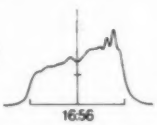
**06** ----
NO DATA

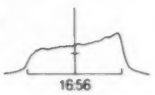
**07** 110.5
NO DATA

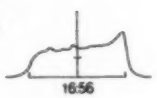
**08** 105.5



**09** 101.1


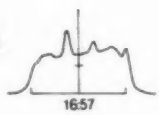

**10** 102.9


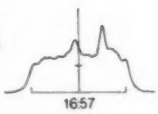

**11** 98.7


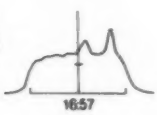

**12** 91.5


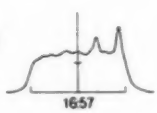

**13** 93.9


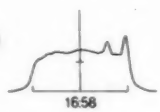

**14** 93.0

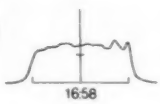
**15** 93.0



**16** 92.6


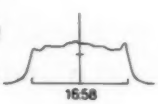

**17** 87.6



**18** 86.4


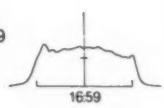

**19** 34.3



**20** 82.3


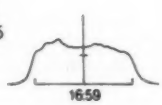

**21** 81.3

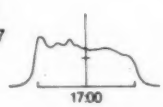
**22** 82.2



**23** 80.2

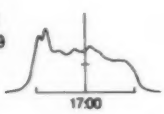
**24** 80.9


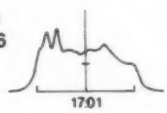

**25** 81.3

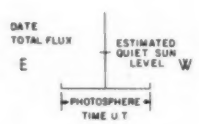
**26** 82.5



**27** 86.7



**28** 89.0

**29** 91.9



**30** 92.6


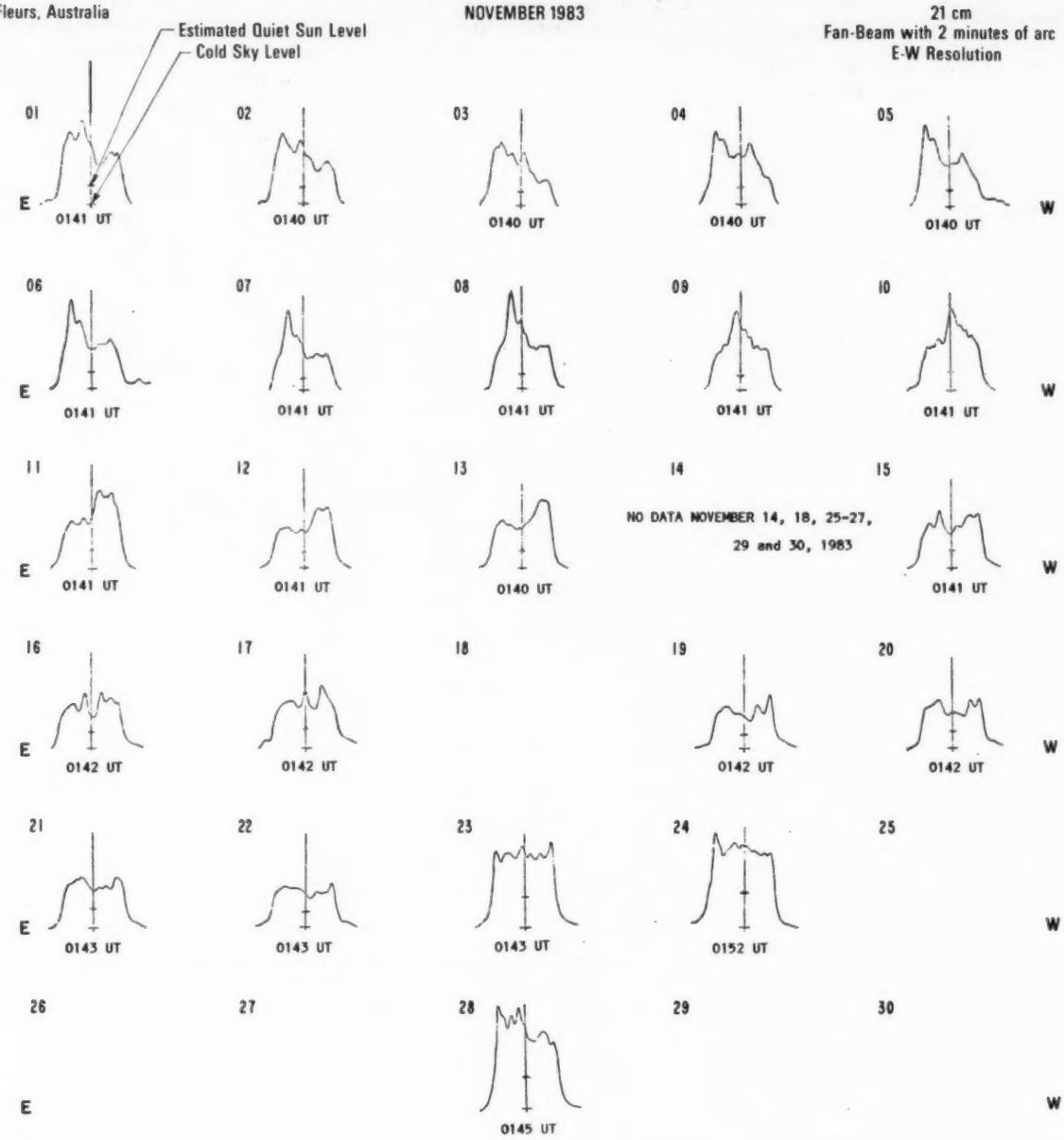



# EAST-WEST SOLAR SCANS

Fleurs, Australia

NOVEMBER 1983

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



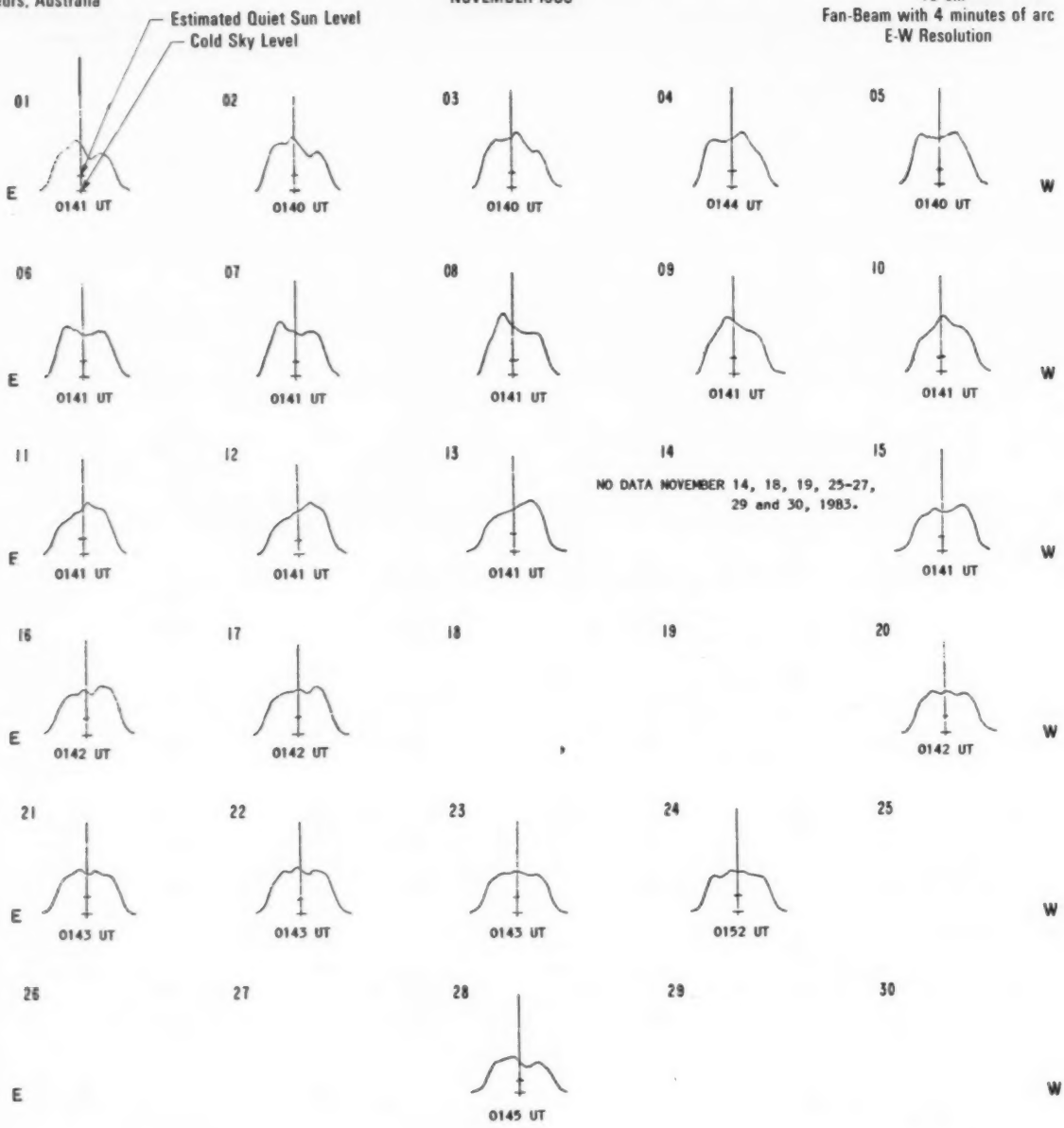
22
Nov 83

# EAST-WEST SOLAR SCANS

Fleurs, Australia

NOVEMBER 1983

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



# SOLAR RADIO EMISSION
# SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1983

| Day | Freq | Sta | Type | Start (UT) | Time of Maximum (UT) | Duration (Min) | Flux Density Peak (10 -22 W/m 2 Hz) | Flux Density Mean (10 -22 W/m 2 Hz) | Int | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 2695 | ATHN | 47 GB | 1121.1 | 1130.5 | 22.7 | 110.0 | | | QL=5 ST=2 TYP=5 |
| | 8800 | ATHN | 47 GB | 1122.0 | 1128.1 | 18.0 | 210.0 | | | QL=5 ST=2 TYP=5 |
| 04 | 2695 | LEAR | 4 S/F | 0037.3 | 0039.0 | 2.8 | 3.0 | | | QL=6 ST=2 TYP=3 |
| | 2800 | OTTA | 240 R | 1555.0 | 1600.0 | 5.0 | 2.2 | 1.5 | | |
| | 2800 | OTTA | 20 GRF | 2000.0 | 2020.0 | 60.0 | 2.0 | 1.4 | | |
| 05 | 2695 | LEAR | 8 S | 0411.3 | 0412.1 | 1.8 | 15.0 | | | QL=6 ST=2 TYP=3 |
| | 8800 | LEAR | 8 S | 0411.6 | 0412.0 | 1.4 | 11.0 | | | QL=6 ST=2 TYP=3 |
| | 2800 | OTTA | 45 C | 1609.5 | 1610.2 | 2.0 | 28.0 | 9.2 | | |
| | 2800 | OTTA | 8 S | 1612.5 | 1612.6 | .5 | 2.4 | 1.2 | | |
| 07 | 2800 | OTTA | 1 S | 1859.0 | 1900.1 | 5.0 | 3.2 | 1.4 | | |
| | 2800 | OTTA | 21 GRF | 1953.0 | 1958.0 | 25.0 | 3.6 | 1.8 | | |
| | 2695 | SGMR | 4 S/F | 1958.6 | 2003.1 | 6.2 | 17.0 | | | QL=6 ST=2 TYP=3 |
| | 2800 | OTTA | 46F C | 1958.8 | 2003.0 | 7.0 | 8.0 | 2.6 | | |
| | 2695 | PENT | 22 GRF | 2050.0 | 2157.0 | 100.0 | 5.8 | 1.8 | | |
| | 8800 | PALE | 49 GB | 2338.5 | 2339.3 | 2.3 | 3100.0 | | | QL=1 ST=2 TYP=6 |
| 08 | 2695 | LEAR | 8 S | 0151.8 | 0152.6 | 1.5 | 18.0 | | | QL=6 ST=2 TYP=3 |
| | 2695 | LEAR | 4 S/F | 0515.6 | 0517.5 | 4.4 | 13.0 | | | QL=6 ST=2 TYP=3 |
| | 2800 | OTTA | 46F C | 1727.0 | 1731.8 | 26.0 | 115.0 | 54.4 | | |
| | 2695 | SGMR | 47 GB | 1730.1 | 1732.0 | 11.7 | 119.0 | | | QL=6 ST=2 TYP=5 |
| | 2695 | PALE | 47 GB | 1730.3 | 1732.1 | 15.3 | 119.0 | | | QL=6 ST=2 TYP=5 |
| | 8800 | SGMR | 47 GB | 1730.5 | 1732.8 | 11.3 | 69.0 | | | QL=6 ST=2 TYP=5 |
| | 8800 | PALE | 47 GB | 1730.6 | 1732.3 | 15.0 | 66.0 | | | QL=6 ST=2 TYP=5 |
| | 2695 | SGMR | 47 GB | 1741.8 | 1741.8 | 11.0 | 65.0 | | | QL=6 ST=2 TYP=5 |
| | 8800 | SGMR | 20 GRF | 1741.8 | 1742.0 | 11.0 | 52.0 | | | QL=6 ST=2 TYP=2 |
| | 2695 | SGMR | 20 GRF | 1752.8 | 1753.0 | .3 | 17.0 | | | QL=6 ST=2 TYP=2 |
| | 8800 | SGMR | 20 GRF | 1752.8 | 1753.3 | 23.2 | 25.0 | | | QL=6 ST=2 TYP=2 |
| | 2800 | OTTA | 29 PBI | 1753.0 | 1753.0 | 185.0 | 12.2 | 3.0 | | |
| | 8800 | PALE | 8 S | 1757.6 | 1757.8 | .4 | 13.0 | | | QL=6 ST=2 TYP=3 |
| 09 | 2800 | OTTA | 8 S | 1608.5 | 1608.8 | .5 | 6.8 | 2.2 | | |
| | 2695 | SGMR | 8 S | 1609.6 | 1609.6 | .2 | 11.0 | | | QL=6 ST=2 TYP=3 |
| 11 | 2695 | LEAR | 20 GRF | 2243.1 | 2259.8 | 22.2 | 7.0 | | | QL=3 ST=2 TYP=2 |
| | 8800 | LEAR | 20 GRF | 2243.3 | 2252.3 | 19.7 | 9.0 | | | QL=3 ST=2 TYP=2 |
| 14 | 2800 | OTTA | 2 S/F | 1720.5 | 1721.0 | 2.0 | 2.0 | .8 | | |
| 15 | 2800 | OTTA | 240 R | 1515.0 | 1530.0 | 15.0 | 2.0 | 1.0 | | |
| 20 | 2800 | OTTA | 32 ABS | 1850.0 | 1900.0 | 30.0 | -1.0 | -.5 | | |
| 28 | 2800 | OTTA | 240 R | 1420.0 | 1640.0 | 140.0 | 4.6 | 3.0 | | |
| 30 | 2800 | OTTA | 46F C | 1612.3 | 1613.5 | 1.7 | 13.2 | 4.4 | | |

**Reports are received routinely from the following observatories:**

ATHN = Athens
BERN = Berne
BORD = Bordeaux
CRIM = Crimea
DWIN = Dwingeloo
GORK = Gorky
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
IZMI = IZMIRAN
KISV = Kislovodsk
KRAK = Krakow
LEAR = Learmonth
MANI = Manila
NAGO = Nagoya
NOBE = Nobeyama
ONDR = Ondrejov
OTTA = Ottawa
PALE = Palehua
PEKG = Peking
PENT = Penticton
POTS = Potsdam
SAOP = Sao Paulo
SGMR = Sagamore Hill
TORN = Torun
TYKW = Toyokawa
TRST = Trieste
UPIC = Upice
VORO = Voroshilov

**Explanation of Type Code:**

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
33 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burst
48 Major

1A Simple 1A
3A Simple 2A
21A Simple 3A GRF
2A Simple 1AF
4A Simple 2AF
240 Rise only
240F Rise only F
24P Post Rise
24PF Post Rise F
16A Fall A
260 Fall Only
26F Fall F
27F Rise and Fall F
27AF Rise and Fall AF
31A Post Burst Decrease A
32A Absorption A
46F Complex F

**Remarks:**

QL = Quality (1=poor to 6=excellent)
ST = Status (1=real time; 2=final; 3=correction; 4=deletion)
TYP= Type (1=noise storm;2=rise in base level;3=minor;4=group;5=major;6=major plus;7=Castelli U-type burst)

# INFERRED IP MAGNETIC FIELD

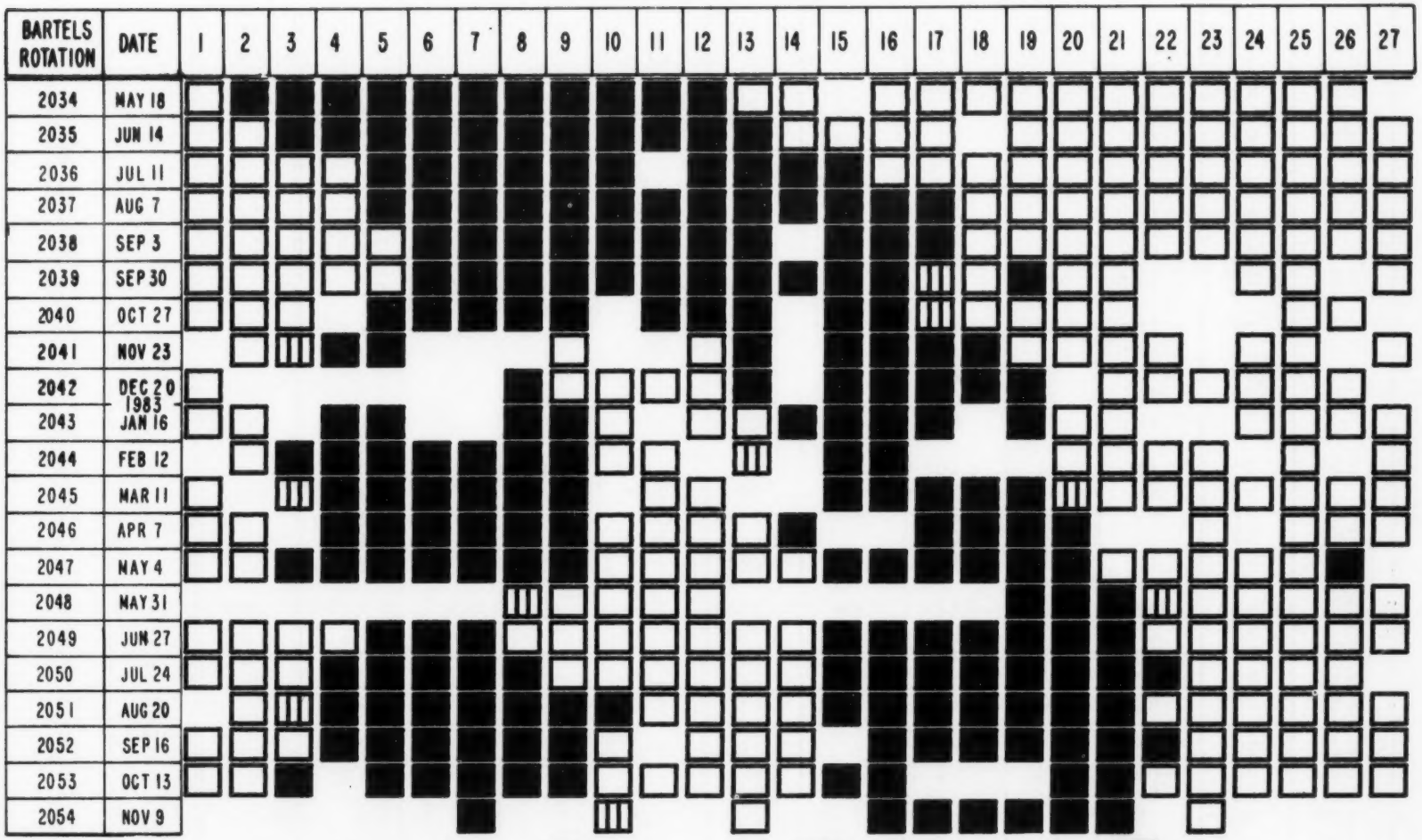
| BARTELS ROTATION | DATE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2033 | APR 26 | - - | AT - | - | - | - | - - | - | TA - | TA - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | AT - | AT - | - |
| 2034 | MAY 23 | - | - | - | AT - | - - | TA - | - | - | - | - | - - | AT - | - | - - | - | - | - | - | - - - | - - - | - - | - - - | - | - | - | TA - |
| 2035 | JUN 19 | - | - | - | - | - | - | - | - | - | - - - | - | - | TA - | - | - - | - - | - | - | - | - | - | - | TA - | - | - | - | - |
| 2036 | JUL 16 | - | - - | - | - - | - - | TA - | - | - | - | - | AT - | - | - | - | AT - | - - | - - | - - | - - | - | - - | - | * - | - | - | - - | * - |
| 2037 | AUG 12 | - | - | - | - - | - | - | - - | - | TA - | - | - - | TA - | TA - | TA - | - | - - | - | TA - | - | TA - | - | - | - | - | - | - | - |
| 2038 | SEP 8 | TA - | AT - | - | - | - | - | - | - | - | - | - | - | - | TA - | - | AT - | - | - | - | - | - | TA - | - | - | - | - | - |
| 2039 | OCT 5 | - | AT - | - | AT - | - | - | - | - | - | AT - | TA - | - | - | - | - | AT - | - | - | - | - | - | - | TA - | - | - | - | - |
| 2040 | NOV 1 | AT - | - | - | - | AT - | - | - | - | - | AT - | - | - | - | - | AT - | - | - | TA - | - | - | - | TA - | - | AT - | - | - |
| 2041 | NOV 28 | TA - | - | - - | - - | - - | AT - | - | - | - | - | - | - | TA - | TA - | - | - | - | - | - | - | - | AT - | AT - | - | - | - | - |
| 2042 | DEC 25 | - | - | AT - | AT - | - | - | - | TA - | - | - | - | - | - | - | - | - | - | TA - | TA - | - | - | - | AT - | - | - | - | - |
| 2043 | 1983 JAN 21 | - - | - | - | - | - | - | - | - | - | TA - | - | - | - | - | TA - | AT - | - | - | - | - | - | - | - | - - | - | - | - |
| 2044 | FEB 17 | - | - | - | - | - | - | - | - | - | - | TA - | - | - | TA - | - | TA - | TA - | - | AT - | TA - | TA - | - | TA - | - | - | - | - |
| 2045 | MAR 16 | - - | - - | AT - | AT - | AT - | - | - | - | - | - | AT - | - - | - | - | - | AT - | - | TA - | - | - | - | - | - | - | - | - | - - |
| 2046 | APR 12 | - | - | TA - | - - | - | - | - | - - | - | - | - | - | TA - | - | - | - | AT - | TA - | AT - | - | - | - | - | AT - | AT - | AT - | - |
| 2047 | MAY 9 | - | - | AT - | - | - | AT - | - | - | - | AT - | AT - | - - | - | - | - | - - | - - | AT - | - | - - - | - - - | - - - | - - | AT - | - | - | AT - |
| 2048 | JUN 5 | - - | - - | AT - | - | AT - | - | AT - | AT - | - | AT - | AT - | - - | - | AT - | AT - | AT - | - | - | AT - | - | - - - | - - - | AT - | - - | - - - | - - | - - |
| 2049 | JUL 2 | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | - | - | AT - | - - | - | AT - | - | - - | AT - | - | AT - | - | - | - | - | - |
| 2050 | JUL 29 | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | - | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | AT - | AT - | - | - |
| 2051 | AUG 25 | - - | - - | - - | AT - | - - | - - | - | - | - | - | - | - | - | - | AT - | - | - | - | - | AT - | - | AT - | - | - | - | - | AT - |
| 2052 | SEP 21 | - | AT - | - | AT - | - | - | - | - - | - - | - - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2053 | OCT 18 | - | - | - | - | - | - | - | - | - - | - - | - - | - | - | - | - | - | - | TA - | - | - | - | - | - | - | - | - | - |
| 2054 | NOV 14 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - - | - - | - - | | | | | | | | | | |

[ ] = definitely towards the sun  [ ] = definitely away from the sun

T = towards the sun  A = away from the sun  * = effect doubtful or not discernible  - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

## STANFORD MEAN SOLAR MAGNETIC FIELD




POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: □ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT

No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

# STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

1982 1983

| day | Dec. | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 42 | -9 | -81 | . | 25 | 69 | . | -23 | 9 | 41 | -51 | -63 |
| 02 | . | . | . | . | 38 | 65 | . | -50 | 16 | 35 | -104 | -27 |
| 03 | . | -89 | -8 | 11 | 52 | 52 | . | -28 | 3 | -3 | -117 | 32 |
| 04 | 10 | -81 | 15 | 33 | 61 | 35 | . | 15 | 13 | -59 | -100 | 75 |
| 05 | -42 | -73 | 45 | 38 | 63 | 12 | . | 44 | 20 | -99 | -68 | 70 |
| 06 | . | -22 | . | 51 | 50 | -3 | . | 51 | 22 | -109 | -37 | 57 |
| 07 | -90 | -2 | . | . | 29 | -15 | 0 | 39 | -12 | -109 | -9 | 35 |
| 08 | -64 | . | 54 | 65 | 21 | -43 | 12 | 17 | -49 | -89 | 38 | 23 |
| 09 | -29 | 53 | 84 | . | . | -51 | 30 | 33 | -81 | -42 | 55 | . |
| 10 | -20 | 46 | 93 | 48 | -15 | -45 | 45 | 27 | -91 | 10 | 46 | . |
| 11 | 26 | 37 | 69 | 30 | -44 | -27 | 28 | -4 | -83 | 33 | 25 | . |
| 12 | 29 | 53 | . | . | -48 | -3 | . | -60 | -73 | 52 | 19 | . |
| 13 | 43 | 84 | 16 | 2 | -43 | 10 | . | -108 | -60 | 60 | 10 | . |
| 14 | 28 | 84 | -19 | -25 | -29 | 27 | . | -120 | -10 | 58 | 4 | . |
| 15 | . | . | -22 | -44 | -11 | 31 | . | -107 | 19 | 42 | -7 | -53 |
| 16 | 8 | 39 | -104 | -62 | 9 | 10 | . | -89 | 56 | 29 | . | . |
| 17 | 57 | 10 | -102 | -27 | 16 | 5 | . | -20 | 14 | 20 | -47 | . |
| 18 | . | . | -67 | -19 | 13 | -9 | -91 | 7 | 78 | 5 | -68 | 0 |
| 19 | 64 | -87 | -37 | -5 | 15 | -69 | -56 | 27 | . | -18 | -62 | . |
| 20 | 32 | -119 | -7 | . | -11 | -87 | -28 | 41 | . | -37 | -54 | . |
| 21 | . | . | 24 | 19 | . | -96 | -1 | 97 | 8 | -63 | -20 | 66 |
| 22 | . | . | 27 | 15 | . | -47 | 23 | 96 | 1 | -66 | 10 | . |
| 23 | . | -25 | . | . | -66 | -11 | 53 | 82 | -17 | -54 | 25 | . |
| 24 | . | -3 | -1 | . | -59 | 6 | 72 | 25 | -34 | -17 | 57 | -52 |
| 25 | . | 31 | . | -23 | -34 | 36 | 101 | 9 | -76 | 12 | 72 | -78 |
| 26 | . | . | -49 | -34 | -15 | 64 | 67 | 11 | -78 | . | 48 | -94 |
| 27 | -31 | 31 | -66 | -42 | . | 101 | 23 | -4 | -36 | 52 | -9 | -82 |
| 28 | 6 | 3 | . | -17 | . | 117 | 27 | -35 | -28 | 71 | -58 | -59 |
| 29 | 42 | -14 |  | -20 | 36 | -12 | 33 | -37 | -12 | 54 | . | -20 |
| 30 | 59 | -51 |  | 1 | . | . | 26 | -39 | 7 | . | . | . |
| 31 | 35 | -91 |  | 18 |  | . |  | -21 | 28 |  | . |  |

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

# BOULDER GEOMAGNETIC SUBSTORM LOG

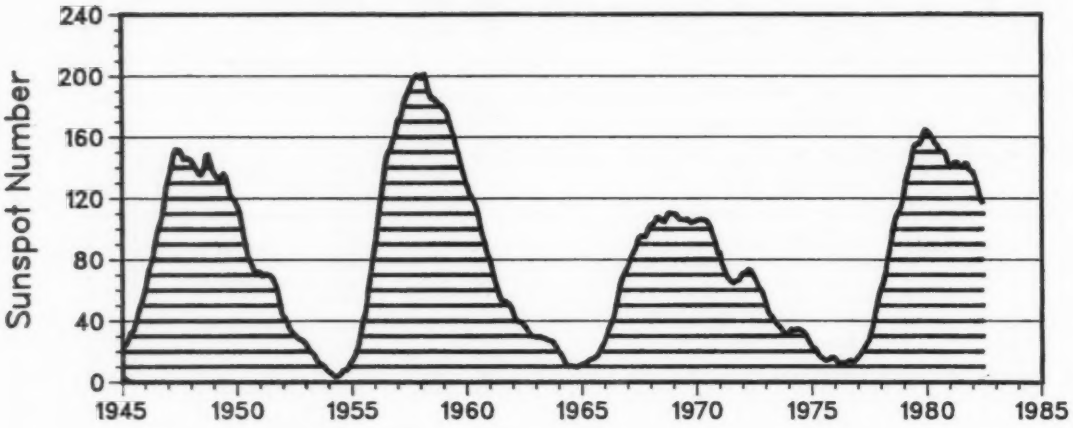
November 1983

| DATE | ONSET TIME | DIR | COMMENTS |
|---|---|---|---|
| 11/01 | | | Field intermittently unsettled. |
| | 0210 | East | |
| | 0825 | West | Initial onset at Ft. Simpson, several injections. |
| | 1105 | West | Moderate substorm. |
| 11/02 | | | Field intermittently active. |
| | 0310 | East | Moderate substorm at NAQ*. |
| | 0830 | West | |
| | 0930 | West | |
| | 1100 | West | Moderate substorm at College. |
| 11/03 | | | Field intermittently unsettled. |
| | 1540 | West | Moderate substorm at College with recovery near 1800 UT. |
| 11/04 | | | Field slightly unsettled. |
| 11/05 | | | Quiet day. |
| 11/06 | | | Quiet day. |
| 11/07 | | | Field unsettled after 1130 UT. |
| | 1330 | West | |
| 11/08 | | | Field intermittently active. |
| | 0050 | East | Boulder in partial ring current sector. |
| | 1005 | West | Strong substorm Southern Alaska. |
| | 1110 | West | Moderate substorm. |
| | 1305 | West | Strong substorm Anchorage to Talkeetna. |
| 11/09 | | | Field strongly active. |
| | 0150 | | Localized substorm at NAQ. |
| | 0420 | East | |
| | 0830 | West | Several injections with recovery near 1100 UT. |
| | 1150 | West | Moderate substorm, numerous injections with recovery near 1700 UT. |
| | 1905 | West | |
| 11/10 | | | Field at weak storm level 0600-2100 UT. |
| 11/11 | | | Field intermittently unsettled. |
| | 0040 | East | |
| | 1105 | West | Moderate substorm. |
| | 1800 | | Positive impulse H-component all mid/low latitude stations. |
| | 2005 | | |
| 11/12 | | | Field at weak storm level 0330-1600 UT. |
| 11/13 | | | Field at weak storm level 0630-1700 UT. |
| 11/14 | 0500 | East | Weak substorm. |
| | 0540 | East | Weak substorm. |
| | 0815 | West | |
| | | | Field at storm level 1100-1900 UT. |
| 11/15 | | | Field active after 1100 UT. |
| | 1120 | West | Several injections. |
| | 1355 | West | |
| 11/16 | | | Field slightly active. |
| | 0030 | East | |
| | 1350 | West | |
| | 1525 | West | |
| | 1620 | West | |
| | 1725 | West | |
| 11/17 | | | Field active all day. |
| | 0425 | Center | |
| | 0910 | West | Strong substorm. |
| | 1040 | West | |
| | 1525 | West | |
| 11/18 | | | Field intermittently active. |
| | 0235 | East | |
| | 0450 | East | |
| | 1010 | West | |
| | 1405 | West | |
| | 1620 | West | |
| | 1710 | West | Initial substorm onset at Anchorage. |
| 11/19 | | | Field intermittently unsettled. |
| | 1115 | | Localized substorm at College. |
| | 1410 | | Auroral oval substorm only. |
| 11/20 | | | Field intermittently active. |
| | 0850 | West | |
| | 0945 | West | |
| | 1055 | West | Initial substorm onset at College. |
| | | | Strong substorm at College with several injections. |
| | 1515 | West | |
| 11/21 | | | Field slightly unsettled. |
| 11/22 | | | Field slightly unsettled. |
| 11/23 | | | Quiet day. |
| 11/24 | | | Field intermittently unsettled. |
| | 0255 | East | |
| | 0740 | West | |
| | 0830 | West | |
| | 1325 | | Weak substorm. |
| | 1450 | | Weak substorm. |
| | 1835 | | Localized substorm vicinity Inuvik. |
| 11/25 | | | Field intermittently unsettled. |
| | 0450 | East | |
| | 0930 | West | Initial substorm onset at College, numerous minor injections with recovery near 1500 UT. |
| 11/26 | | | Field unsettled all day. |
| | 0210 | East | |
| | 0555 | Center | Several injections. |
| | 1145 | West | Weak substorm. |
| | 1300 | West | Weak substorm. |
| | 1645 | West | Weak substorm. |
| 11/27 | | | Field unsettled 0600-1600 UT. |
| | 0900 | West | Weak substorm. |
| | 1000 | West | Initial substorm onset at College, various onsets subsequently at other stations. |
| | 1245 | West | |
| | 1450 | West | Weak substorm. |
| 11/28 | | | Field unsettled after 1300 UT. |
| | 0905 | West | Weak substorm. |
| | 1410 | West | |
| | 1530 | West | Weak substorm. |
| 11/30 | | | Field unsettled all day. |
| | 0750 | West | |
| | 1135 | West | Initial substorm onset at College, several minor injections with recovery near 1500 UT. |
| | 1720 | West | Several minor injections with recovery near 2000 UT. |

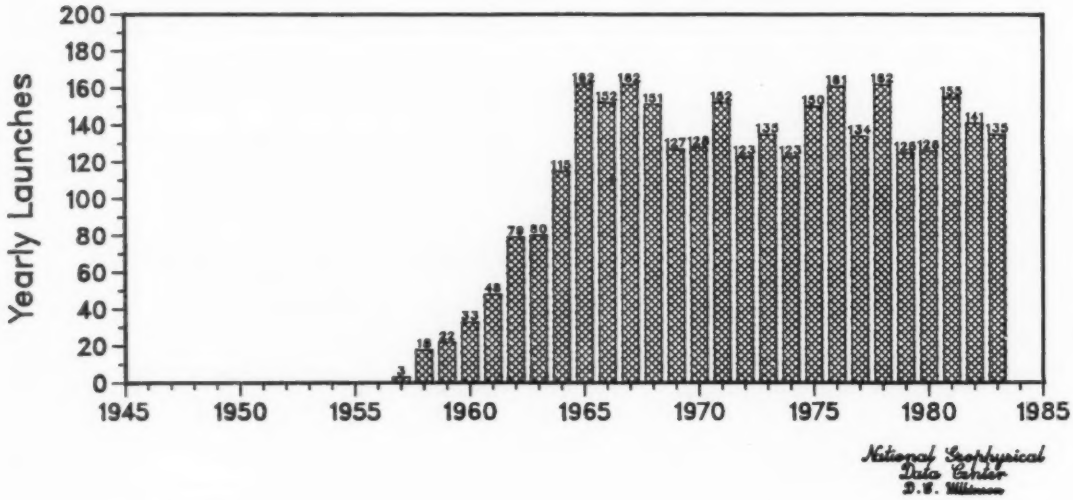
* Note: Narsarssuaq became operational on 19 April 1983. For convenience, it will be identified by the call letters NAQ.

# SOLAR ACTIVITY AND SPACE LAUNCHES

SMOOTHED MONTHLY SUNSPOT NUMBERS




SPACE LAUNCHES WORLDWIDE




National Geophysical Data Center
D.F. Williamson

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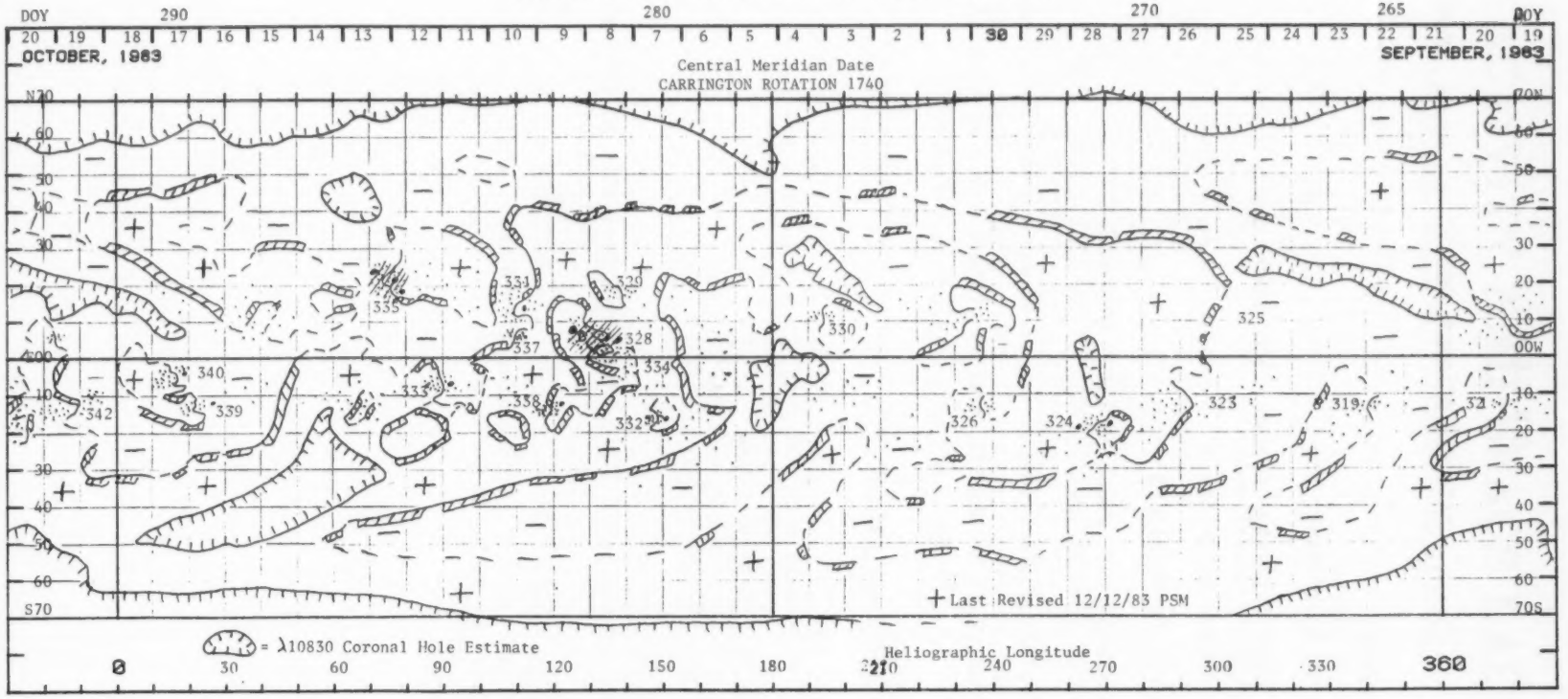
30 OCT 83

# Hα SYNOPTIC CHART

## CARRINGTON ROTATION 1740 (PRELIMINARY)

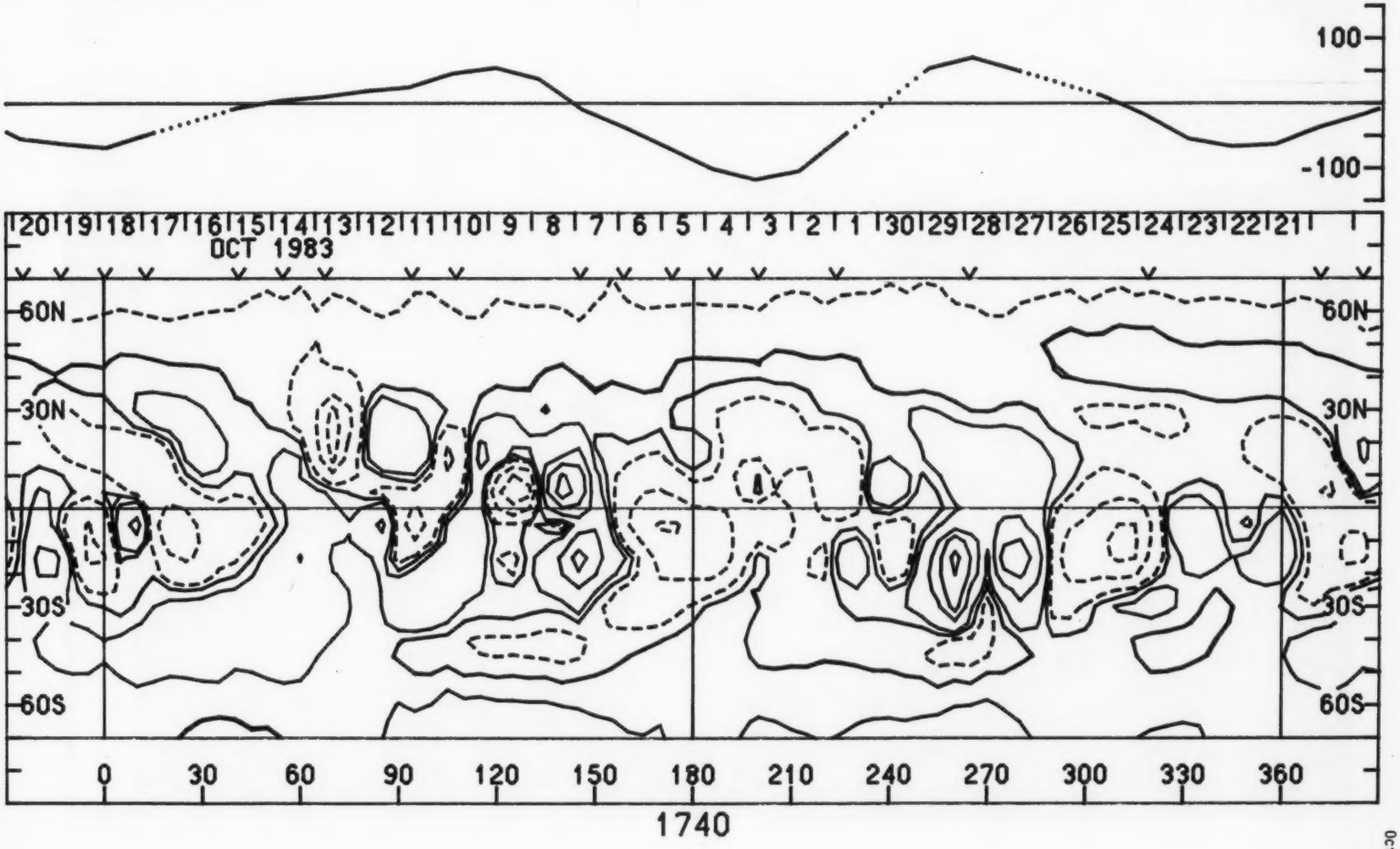


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1740

Stanford Solar Observatory

0, ±100, 200, 500... μT



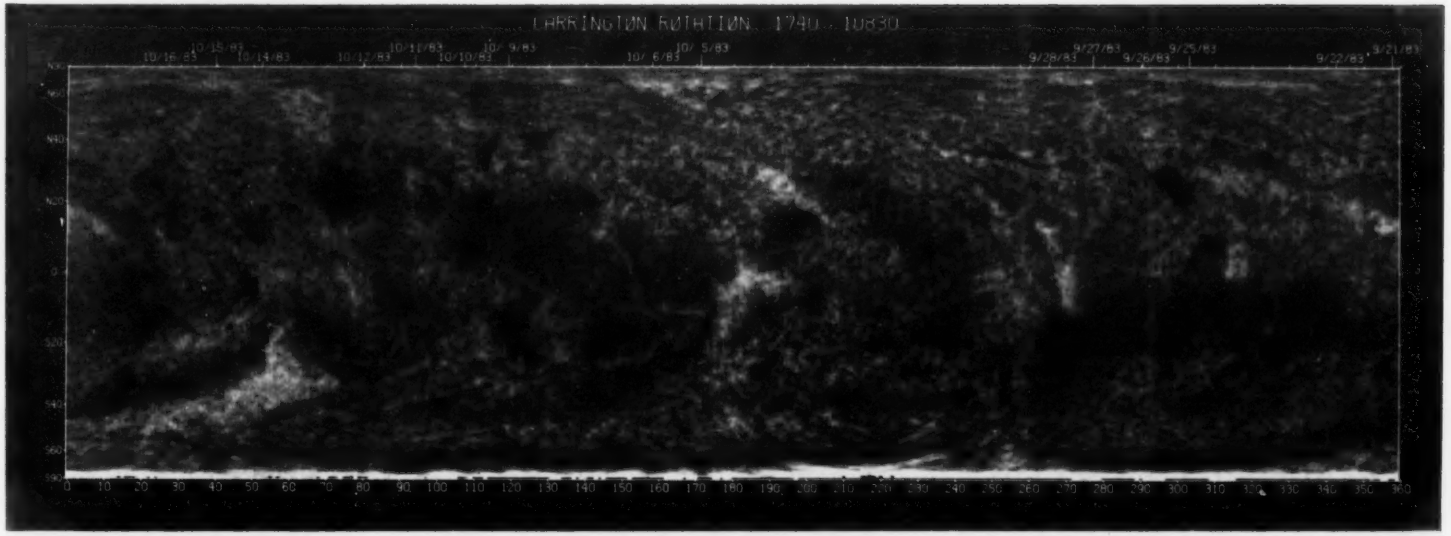

31
Oct 8-

KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

# HELIUM 10830Å SYNOPTIC MAPS

## CARRINGTON ROTATION 1740

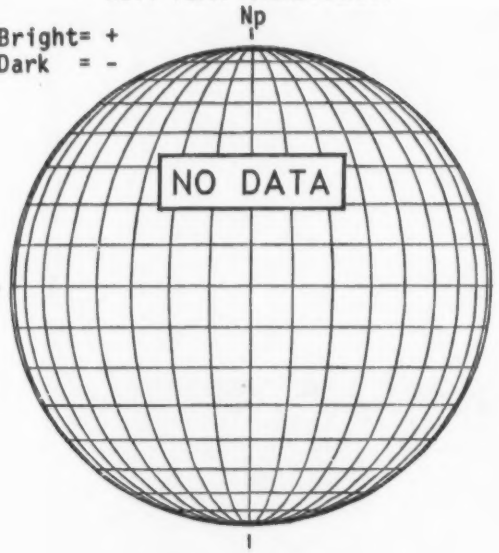
KITT PEAK NATIONAL OBSERVATORY



# O C T O B E R 01, 1 9 8 3 (P= 25.97, $B_0$= 6.73, $L_0$= 234.56)

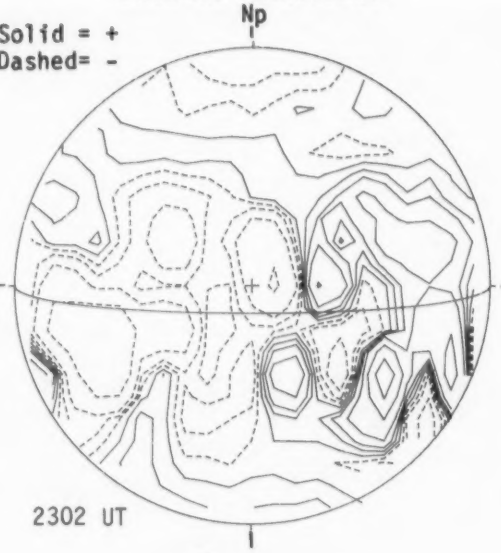
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



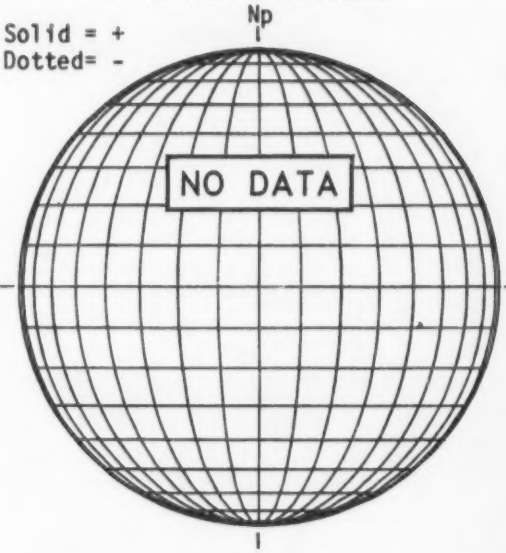

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

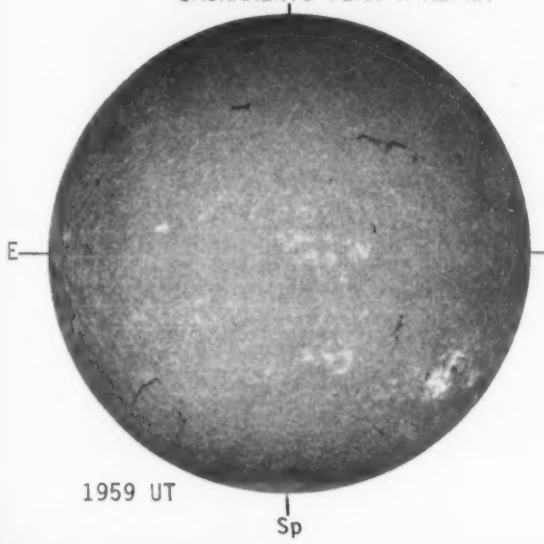



MT. WILSON MAGNETOGRAM

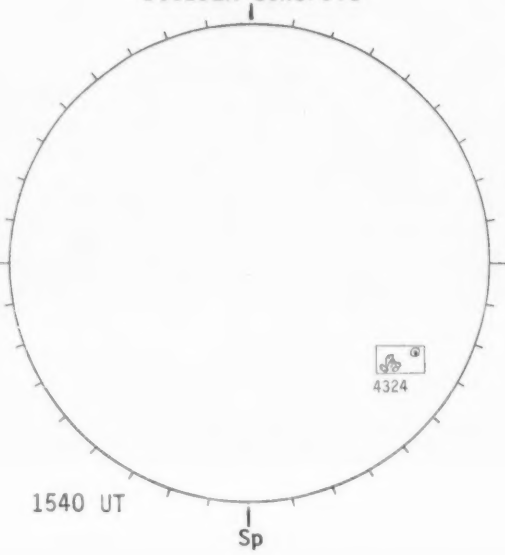
Solid = +
Dotted= -



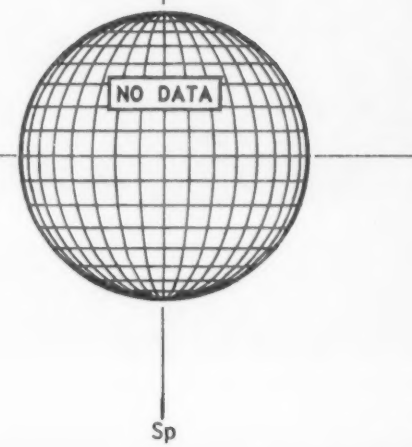

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)




# O C T O B E R 02, 1 9 8 3 (P= 26.04, $B_0$= 6.69, $L_0$= 221.37)

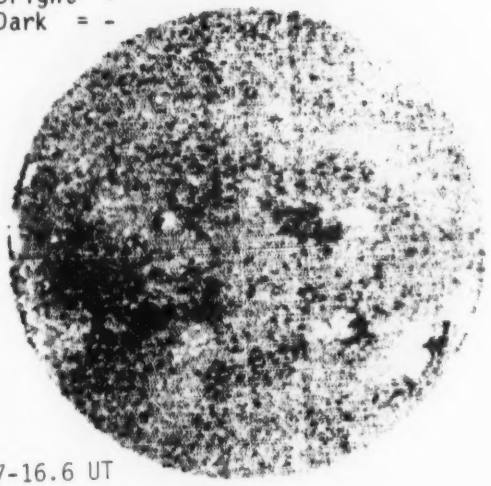
Sp Sp Sp

O C T O B E R 02, 1 9 8 3 (P= 26.04, $B_o$= 6.69, $L_o$= 221.37)

MT. WILSON MAGNETOGRAM

Np

Bright= +
Dark = -



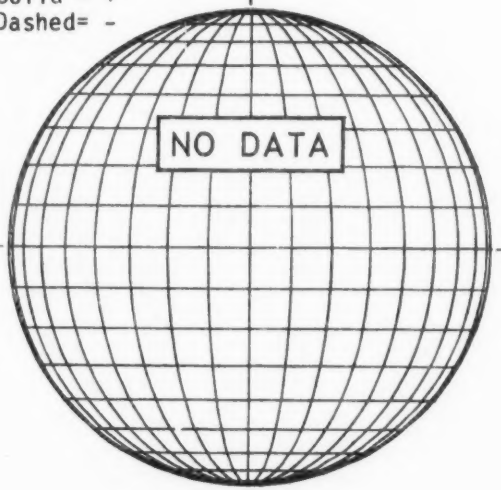
E—

15.7-16.6 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

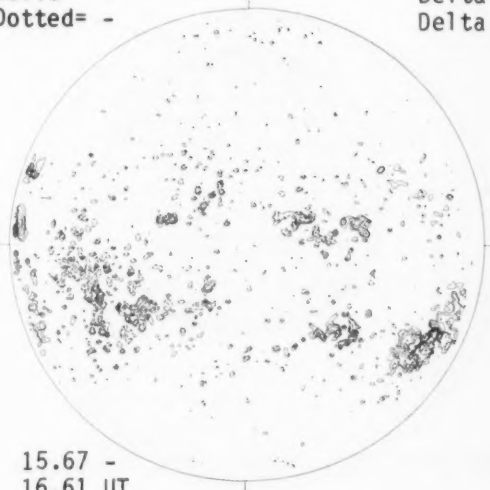



MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

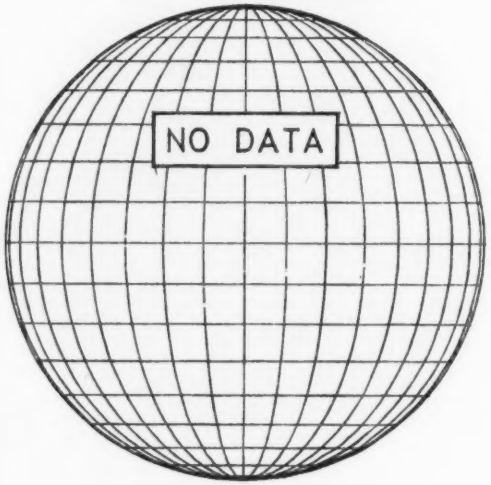
Delta Y=12.7
Delta X= 9.6



—W

15.67 -
16.61 UT

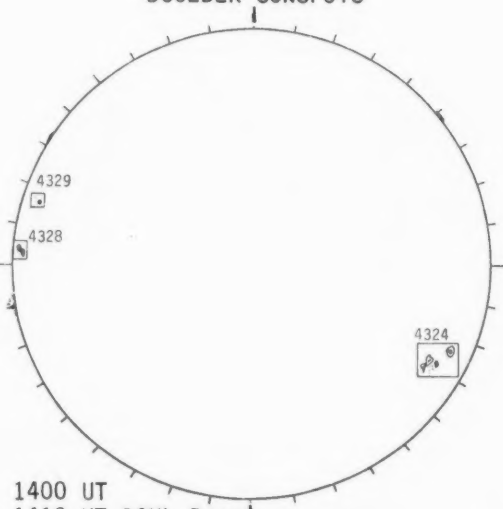
SACRAMENTO PEAK H-ALPHA




E—

Sp

BOULDER SUNSPOTS




1400 UT
1410 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

—W

Sp

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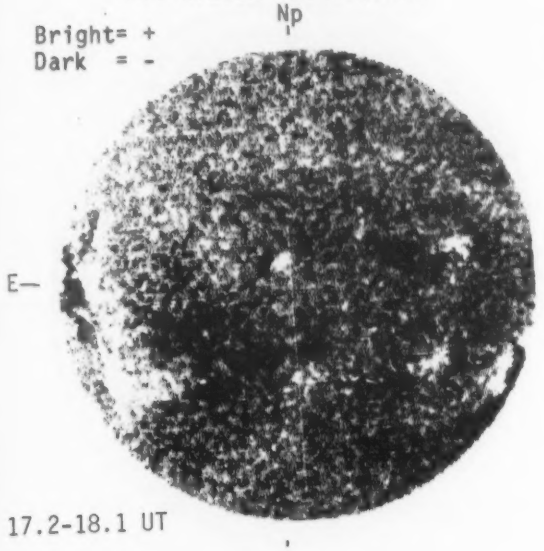
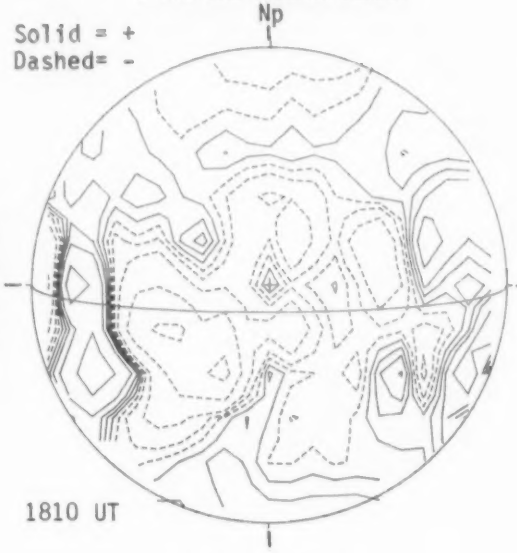
## O C T O B E R 03, 1 9 8 3 (P= 26.10, $B_0$= 6.64, $L_0$= 208.17)

MT. WILSON MAGNETOGRAM



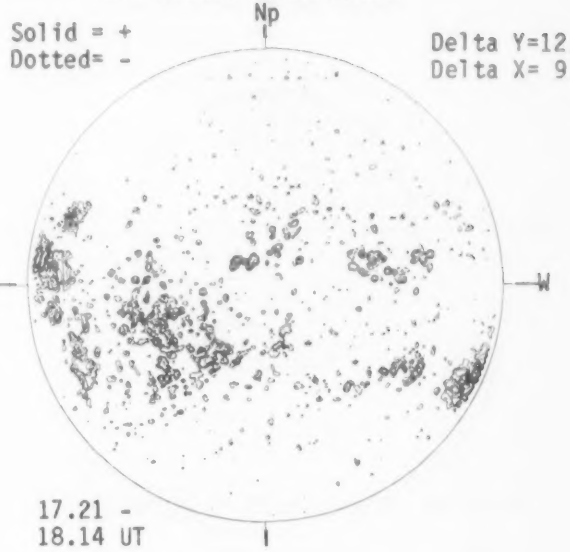

17.2-18.1 UT

STANFORD MAGNETOGRAM



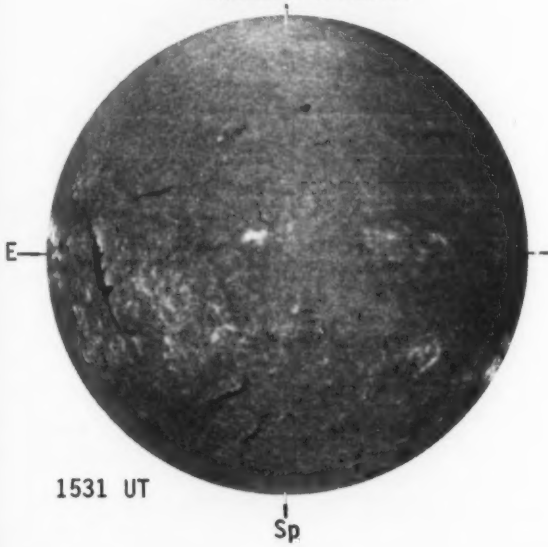

1810 UT

MT. WILSON MAGNETOGRAM



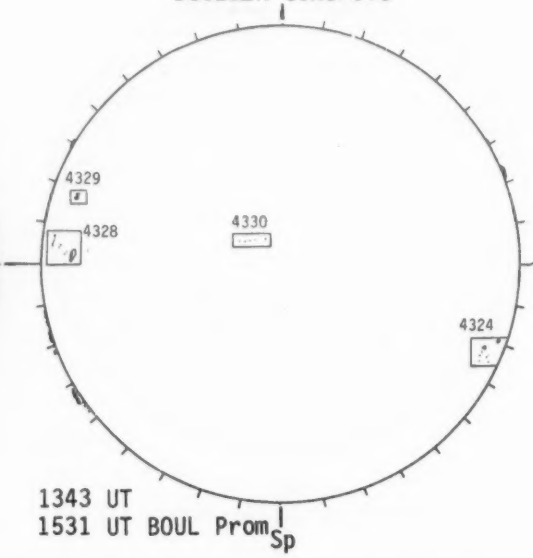

17.21 -
18.14 UT

BOULDER H-ALPHA



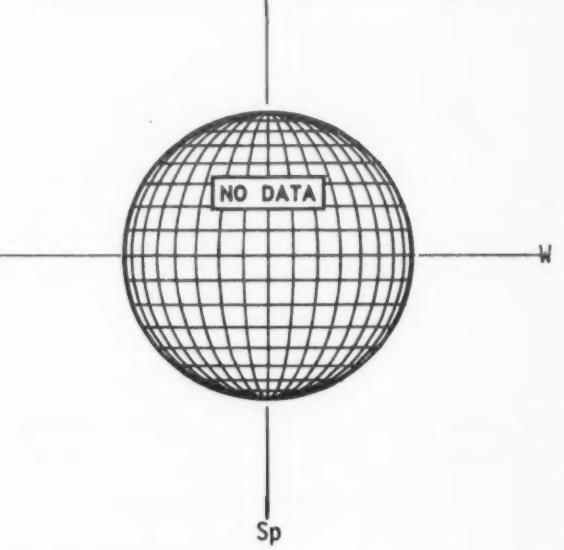

1531 UT

BOULDER SUNSPOTS




1343 UT
1531 UT BOUL Prom

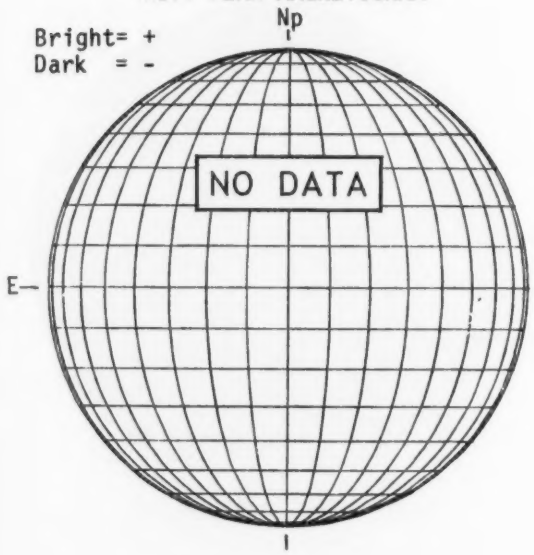
SACRAMENTO PEAK CORONA (5303 Angstrom)



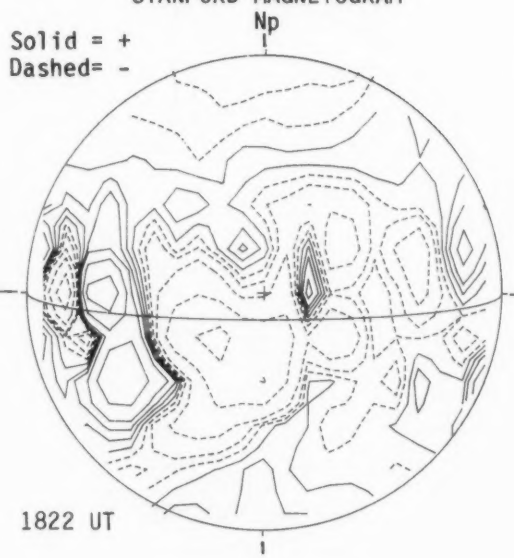

## O C T O B E R 04, 1 9 8 3 (P= 26.15, $B_0$= 6.59, $L_0$= 194.98)

O C T O B E R 04, 1 9 8 3 (P= 26.15, $B_o$= 6.59, $L_o$= 194.98)

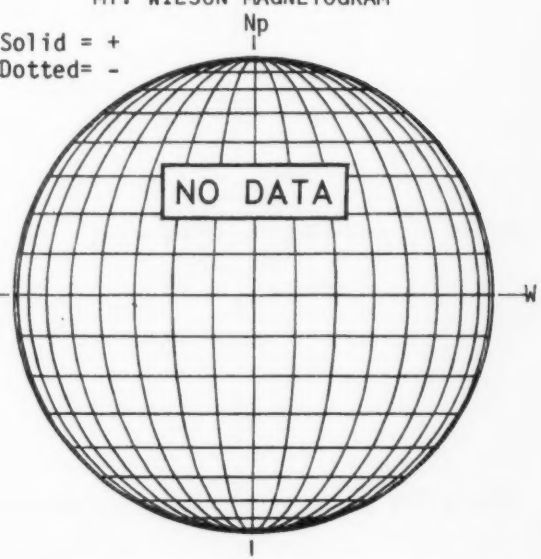
KITT PEAK MAGNETOGRAM



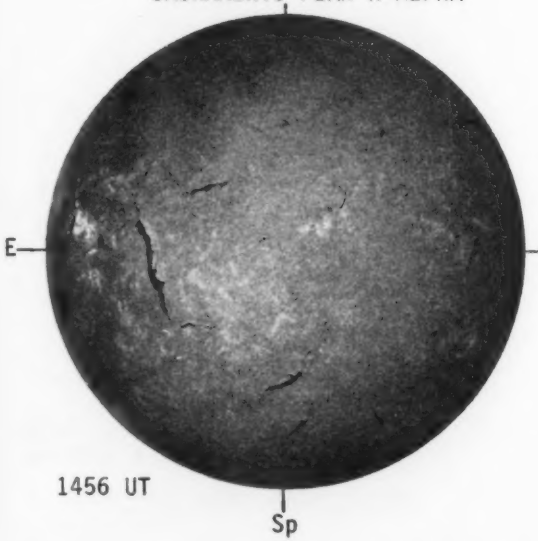

STANFORD MAGNETOGRAM



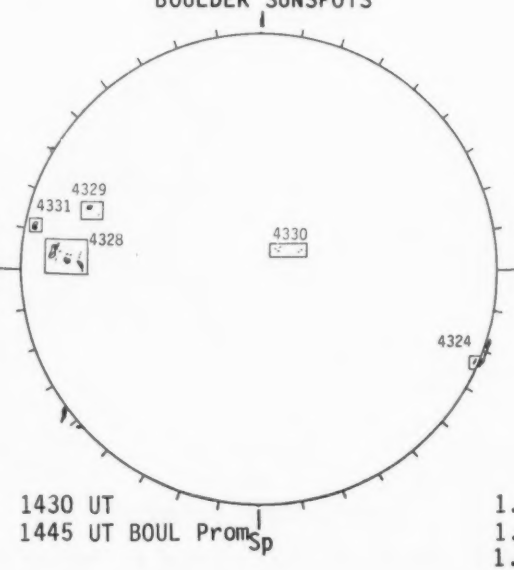

MT. WILSON MAGNETOGRAM



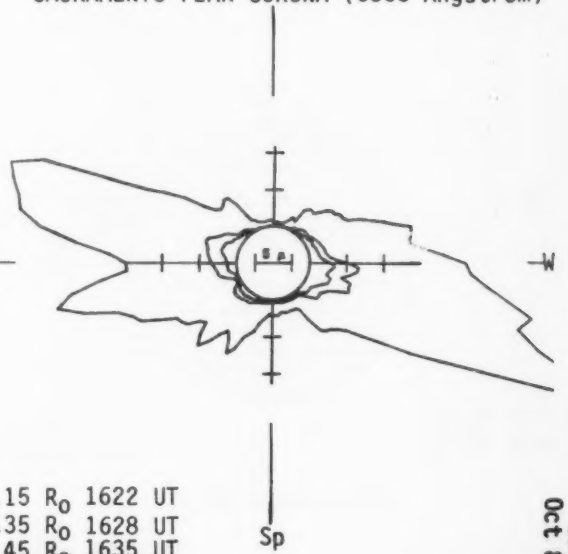

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)

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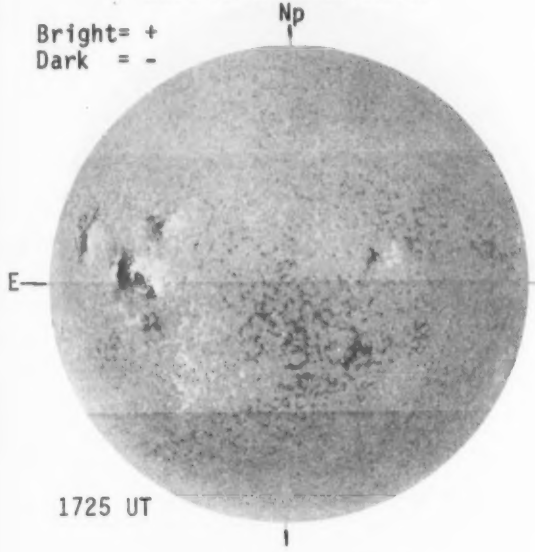
## O C T O B E R 05, 1 9 8 3 (P= 26.20, $B_o$= 6.53, $L_o$= 181.78)

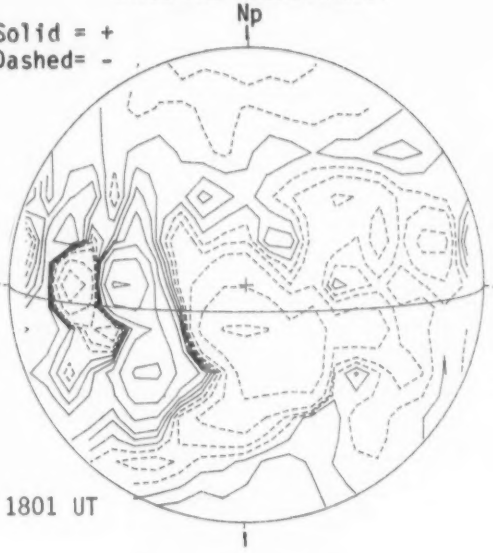
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

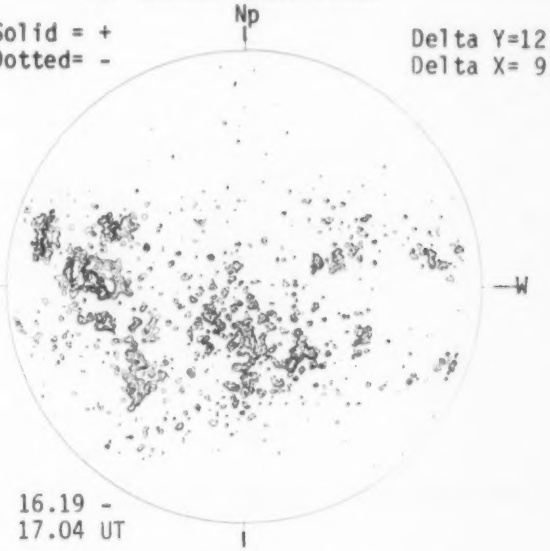
Solid = +
Dashed= -



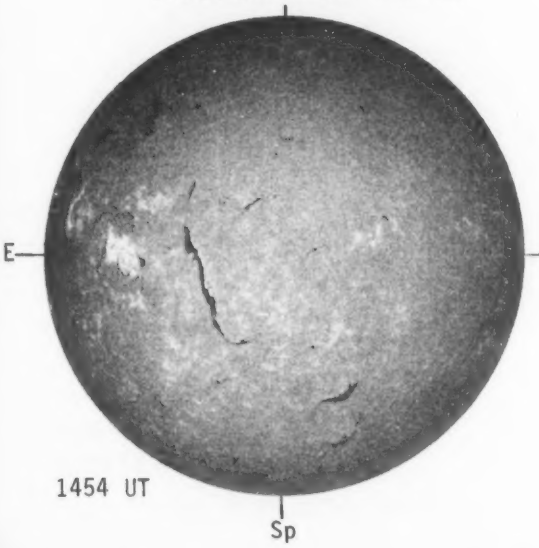

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

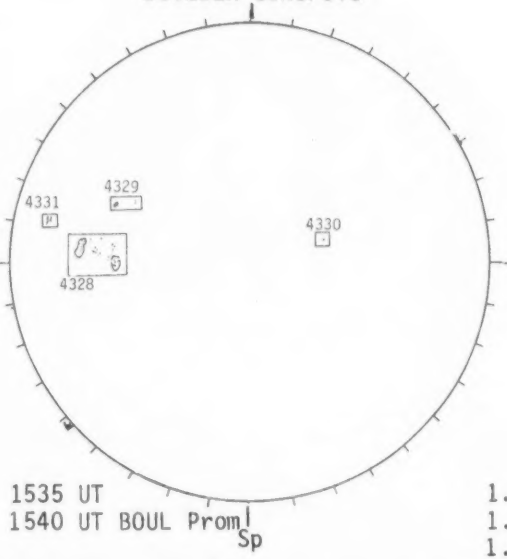
Delta Y=12.6
Delta X= 9.6



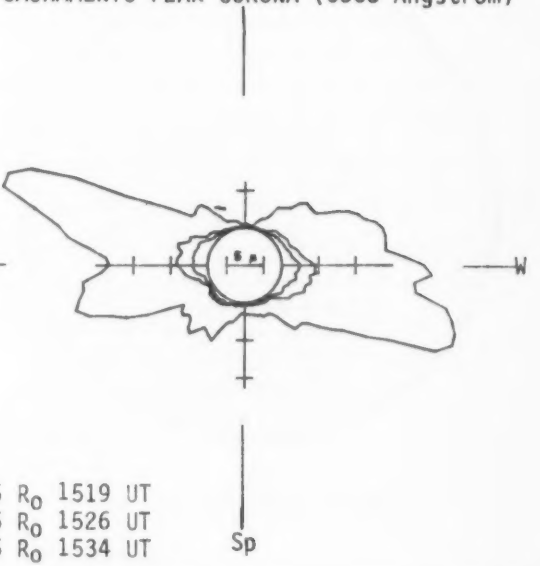

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)




## O C T O B E R 06, 1 9 8 3 (P= 26.24, $B_o$= 6.48, $L_o$= 168.59)

KITT PEAK MAGNETOGRAM

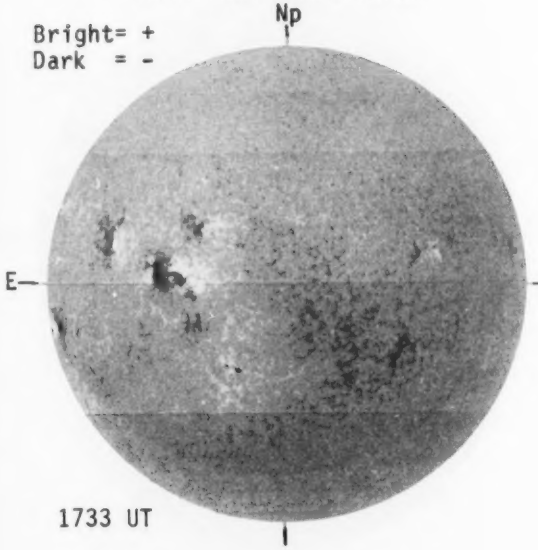
STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

O C T O B E R 06, 1 9 8 3 (P= 26.24, $B_o$= 6.48, $L_o$= 168.59)

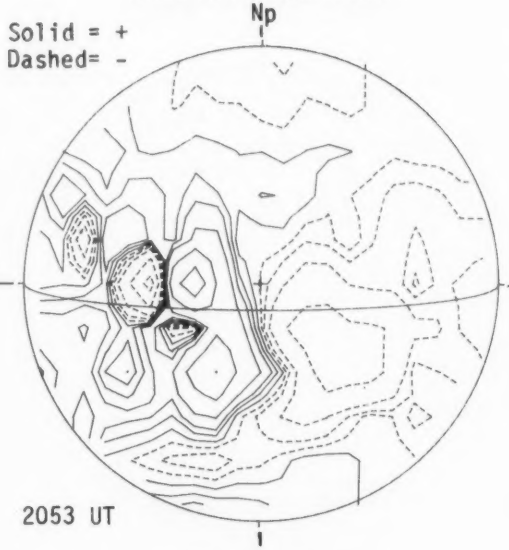
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



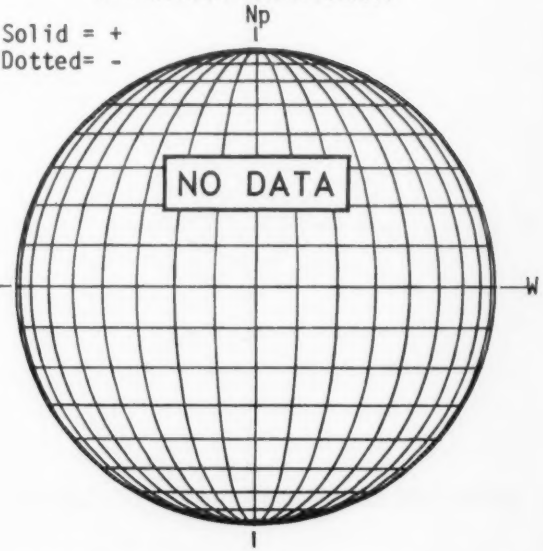

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

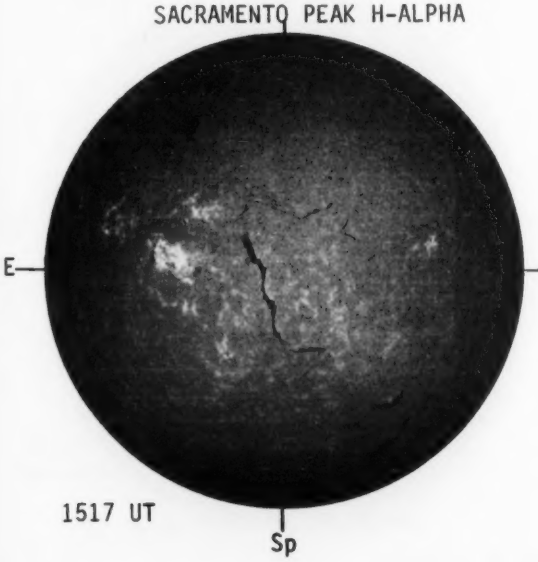



MT. WILSON MAGNETOGRAM

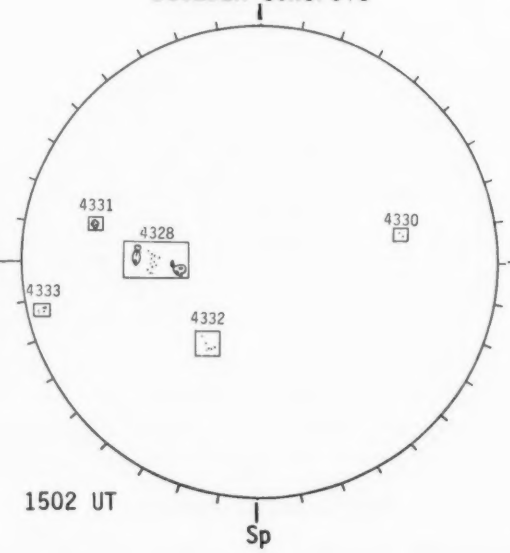
Solid = +
Dotted= -



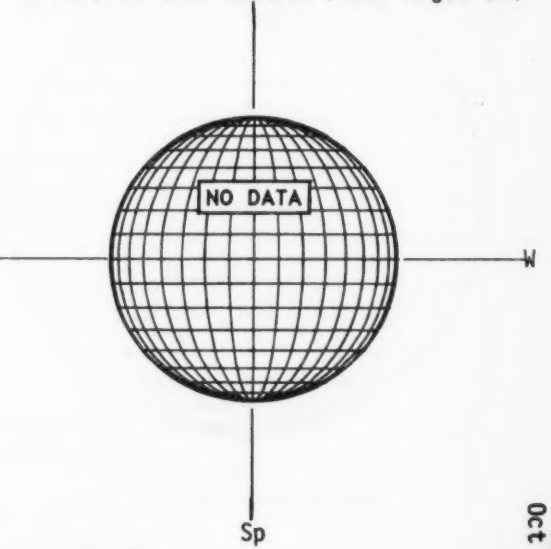

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS



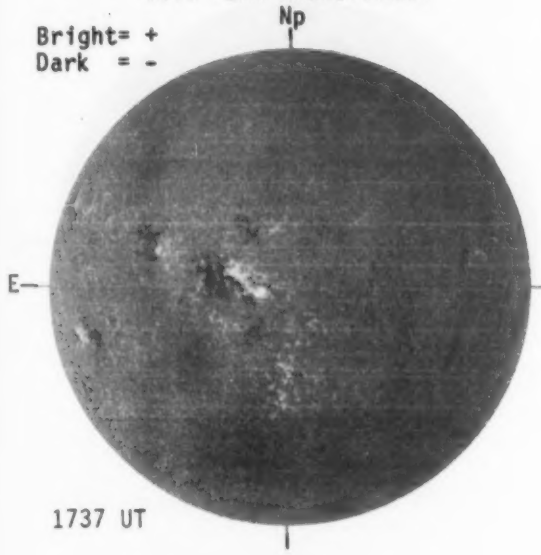

SACRAMENTO PEAK CORONA (5303 Angstrom)



# O C T O B E R 07, 1 9 8 3 (P= 26.27, $B_o$= 6.42, $L_o$= 155.40)

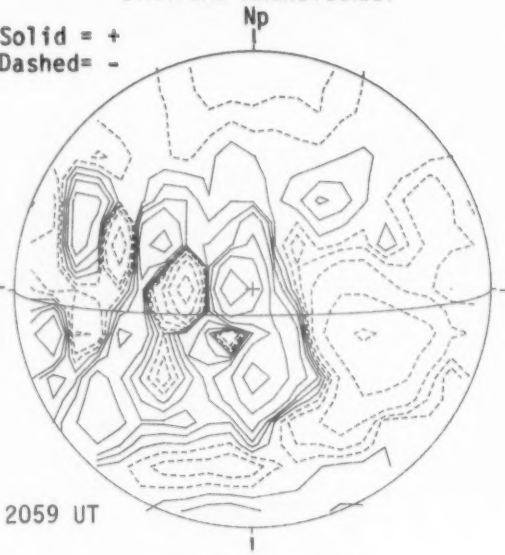
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



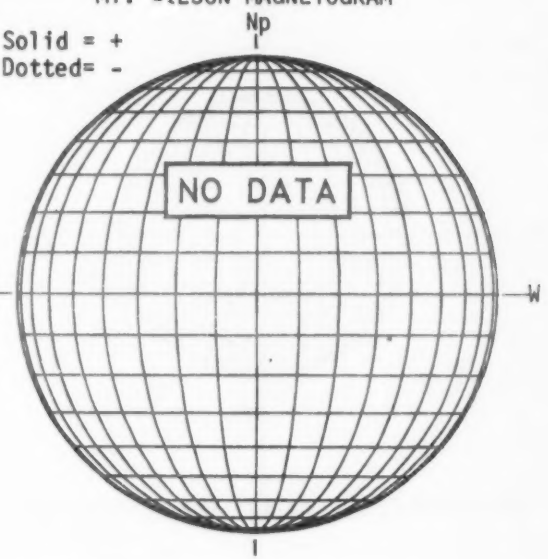

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

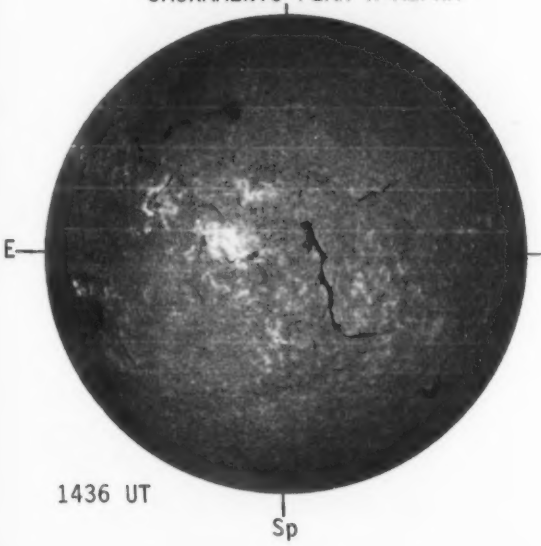



MT. WILSON MAGNETOGRAM

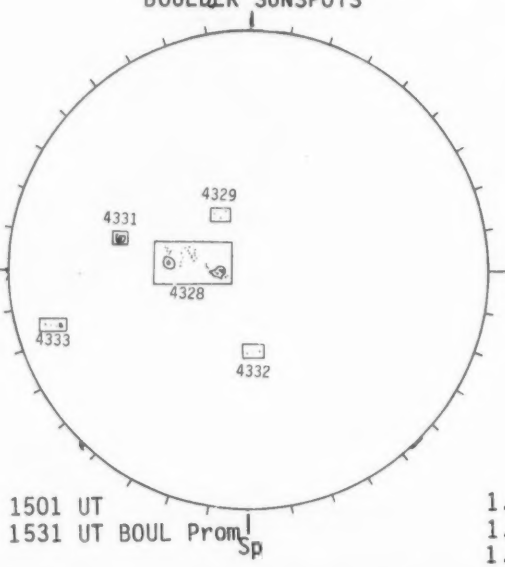
Solid = +
Dotted= -



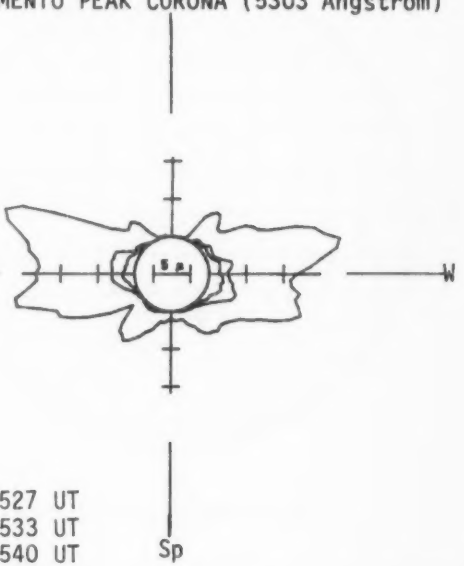

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)



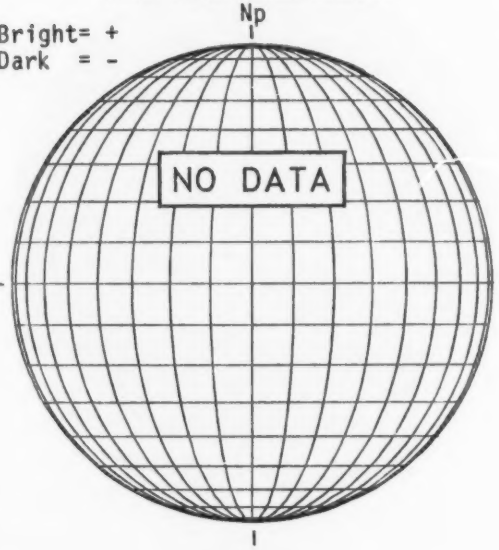

# O C T O B E R 08, 1 9 8 3 (P= 26.29, $B_o$= 6.36, $L_o$= 142.20)

Sp Sp 1.45 $R_o$ 1540 UT Sp

O C T O B E R 08, 1 9 8 3 (P= 26.29, $B_o$= 6.36, $L_o$= 142.20)

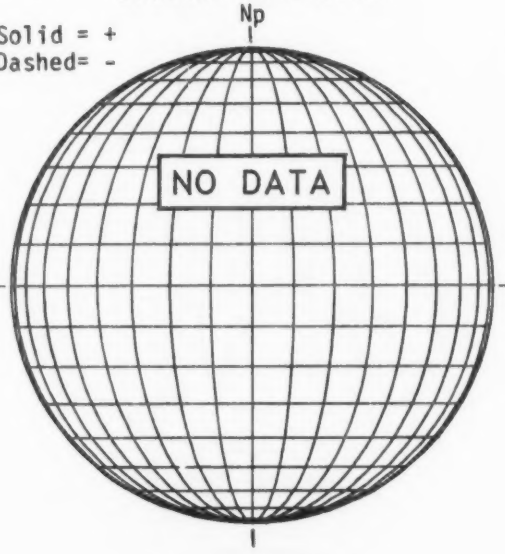
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



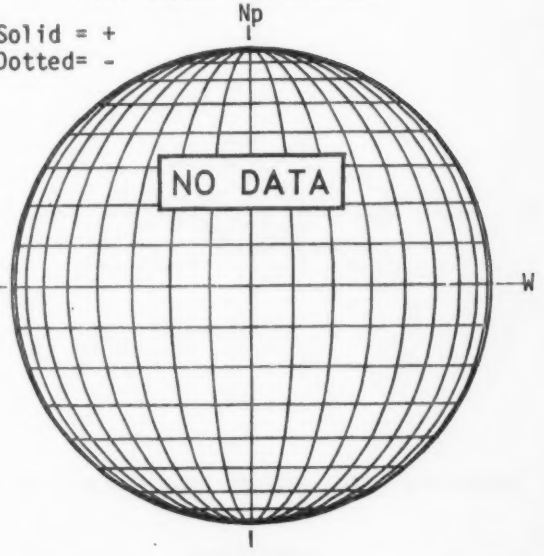

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

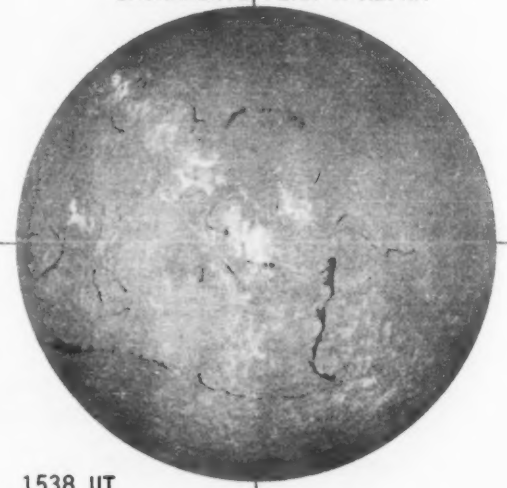



MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -



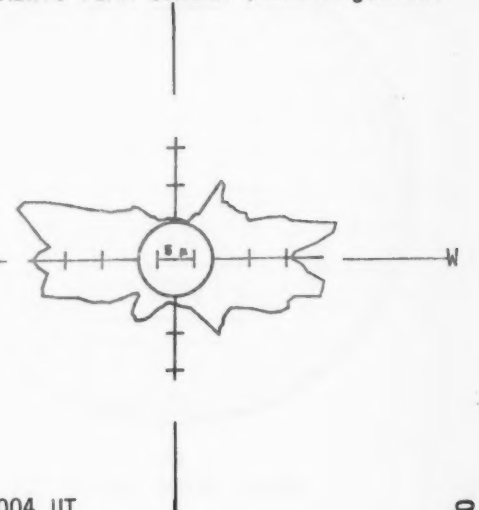

SACRAMENTO, PEAK H-ALPHA




1538 UT

BOULDER SUNSPOTS

SACRAMENTO PEAK CORONA (5303 Angstrom)




1.15 $R_o$ 2004 UT

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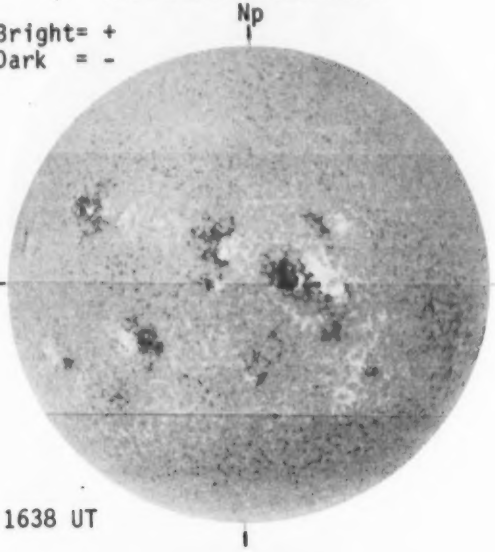
## O C T O B E R  09,  1 9 8 3  (P= 26.31, $B_0$= 6.30, $L_0$= 129.01)

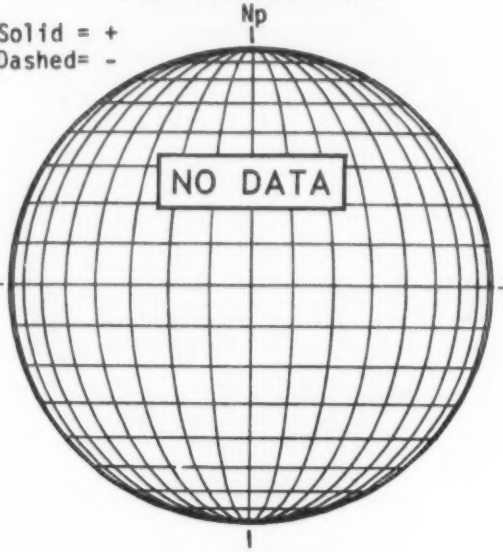
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



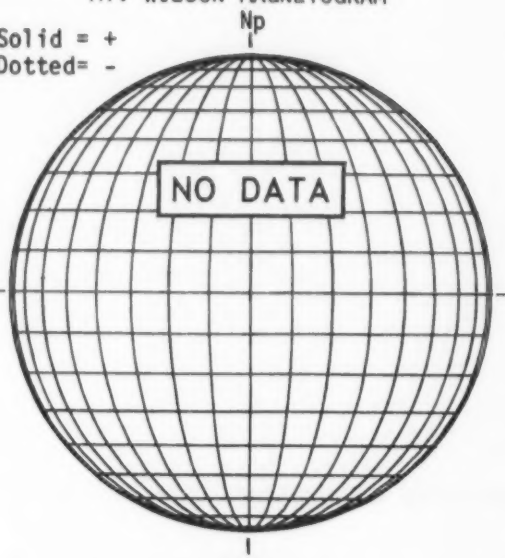

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

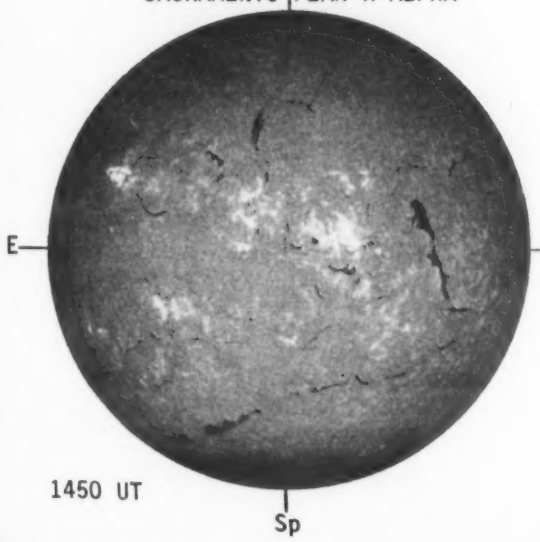



MT. WILSON MAGNETOGRAM

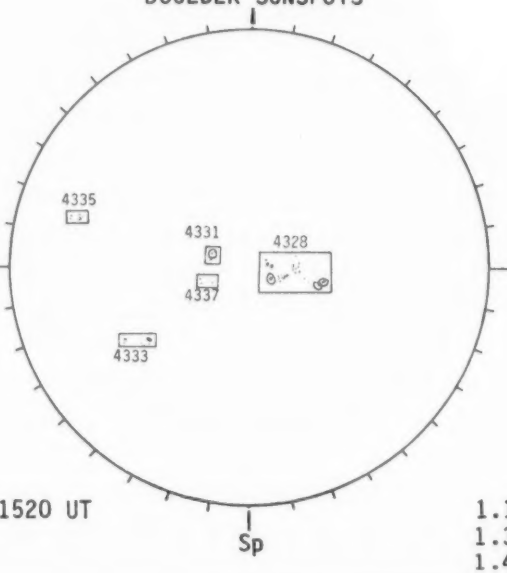
Solid = +
Dotted= -



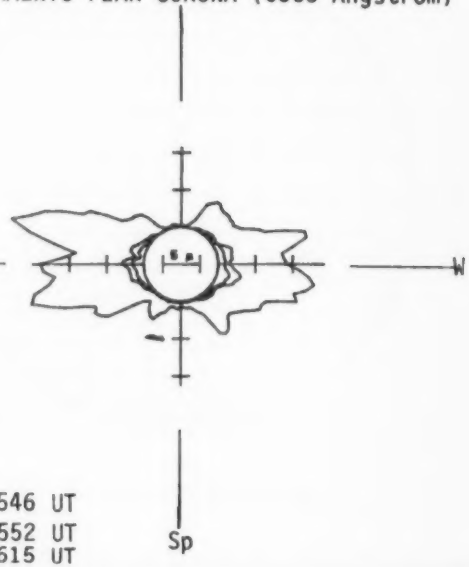

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)




## O C T O B E R  10,  1 9 8 3  (P= 26.32, $B_0$= 6.24, $L_0$= 115.82)

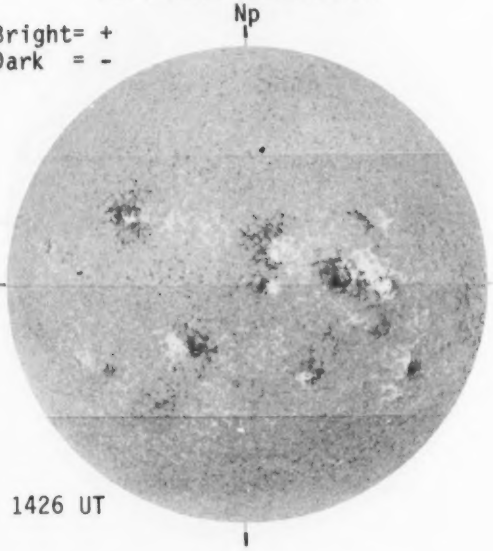
1.35 $R_o$ 1552 UT
1.45 $R_o$ 1615 UT

Sp

O C T O B E R 10, 1 9 8 3 (P= 26.32, $B_o$= 6.24, $L_o$= 115.82)

KITT PEAK MAGNETOGRAM

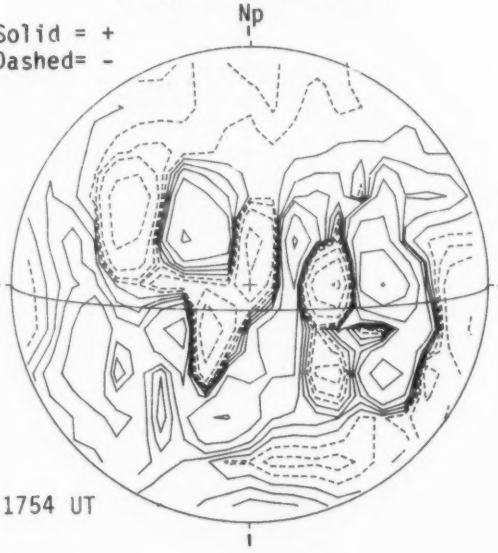
Bright= +
Dark = -




1426 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

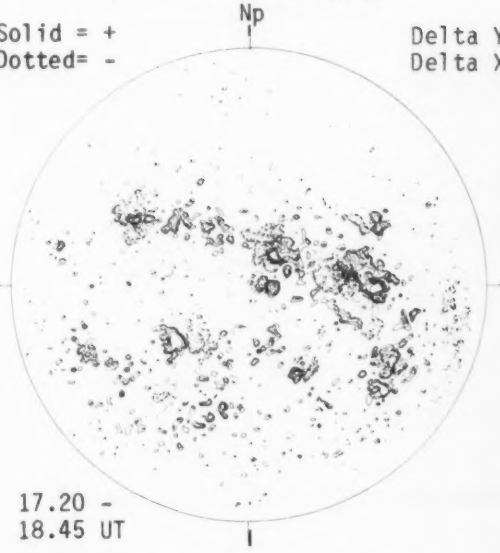



1754 UT

MT. WILSON MAGNETOGRAM

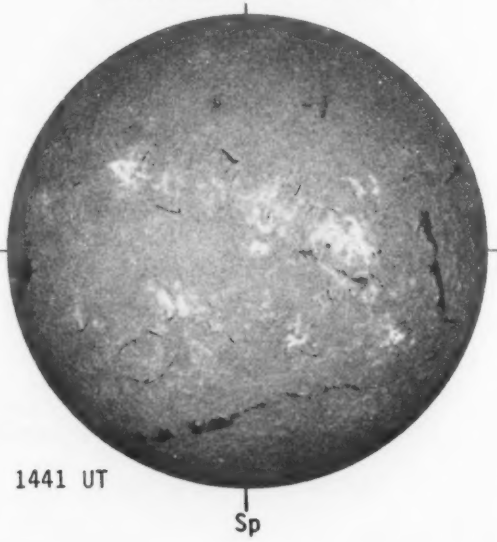
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



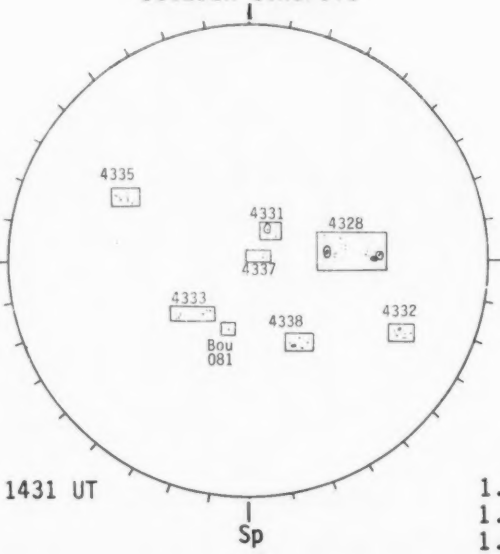

17.20 -
18.45 UT

SACRAMENTO PEAK H-ALPHA



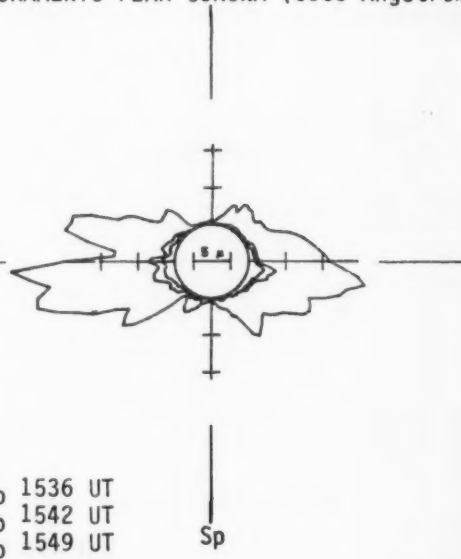

1441 UT

BOULDER SUNSPOTS




1431 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)

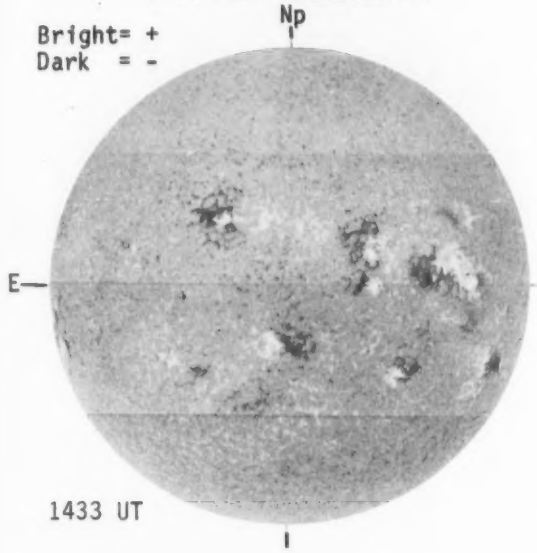



1.15 $R_o$ 1536 UT
1.35 $R_o$ 1542 UT
1.45 $R_o$ 1549 UT

## O C T O B E R  11,  1 9 8 3  (P= 26.32, $B_0$= 6.17, $L_0$= 102.63)

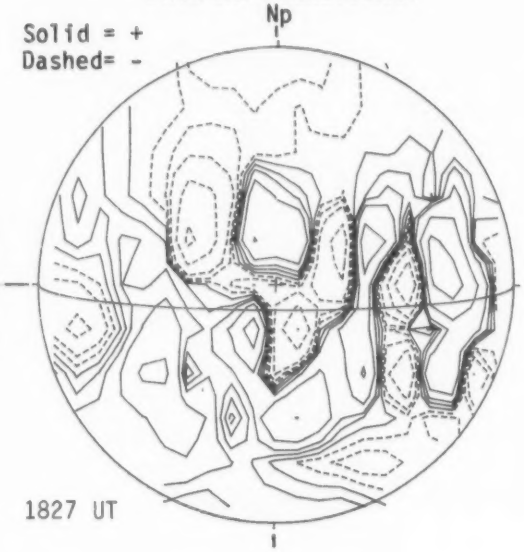
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

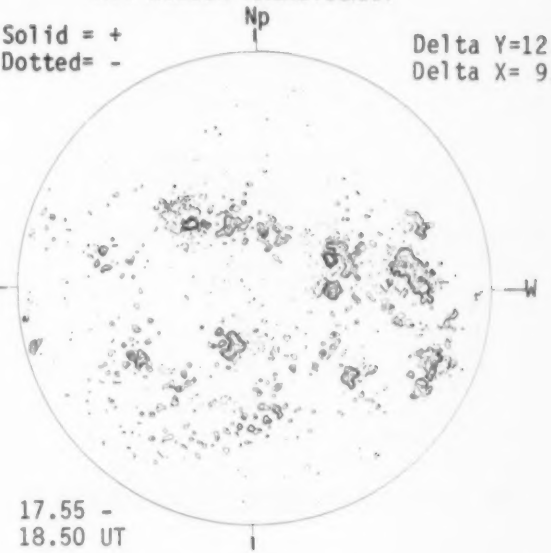
Solid = +
Dashed= -



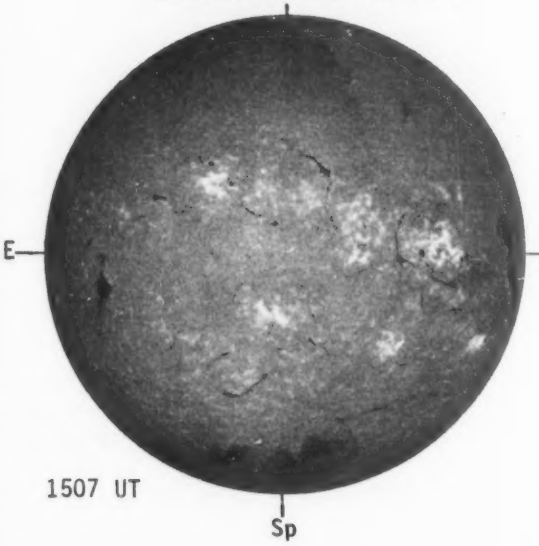

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

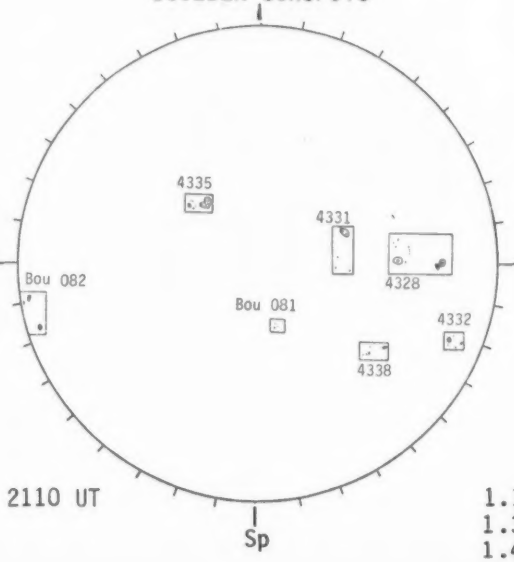
Delta Y=12.6
Delta X= 9.6



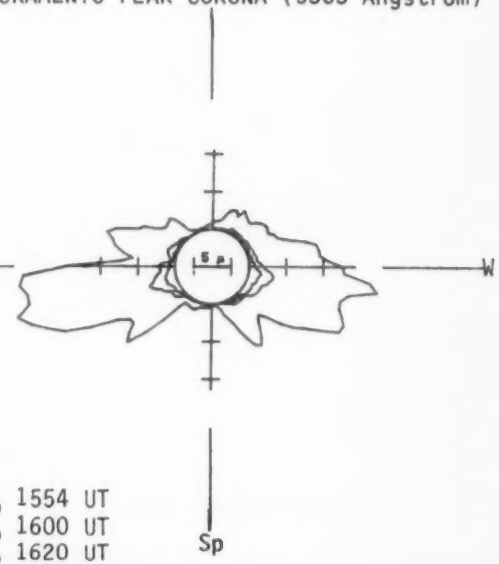

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)



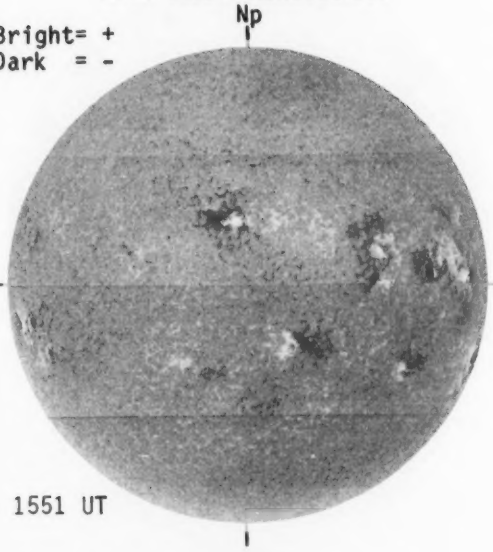

## O C T O B E R  12,  1 9 8 3  (P= 26.32, $B_0$= 6.11, $L_0$= 89.43)

Sp Sp 1.45 $R_o$ 1620 UT Sp

# O C T O B E R 12, 1 9 8 3 (P= 26.32, $B_o$= 6.11, $L_o$= 89.43)

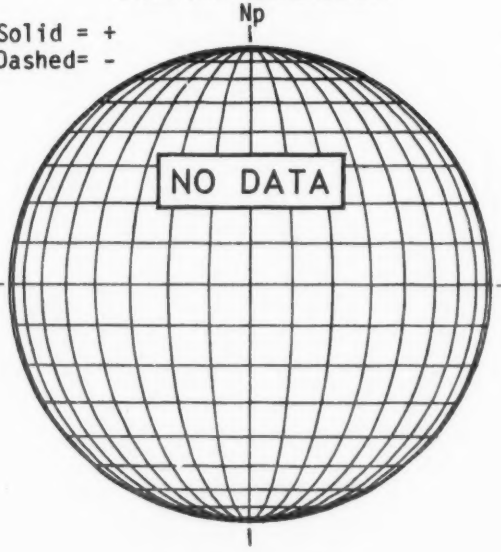
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

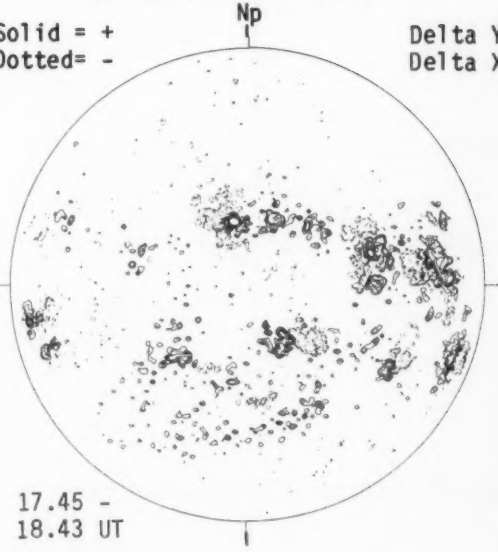
Solid = +
Dashed= -



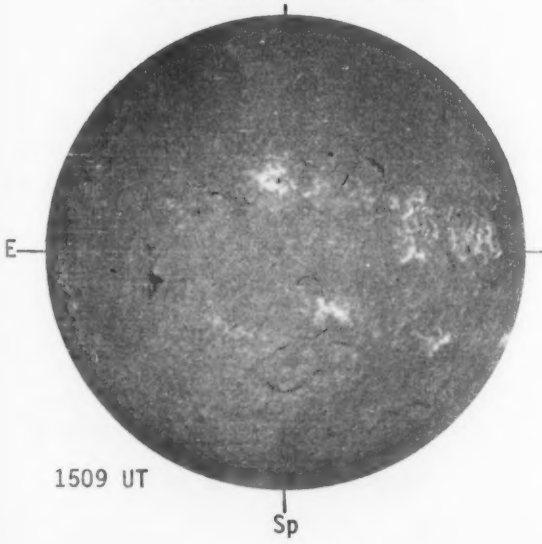

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

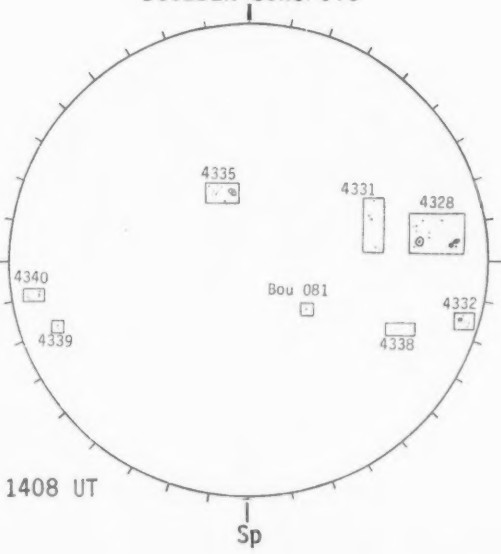
Delta Y=12.6
Delta X= 9.6




SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)

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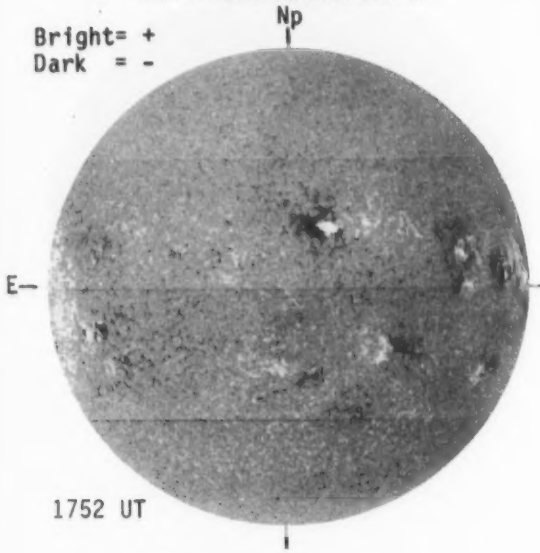
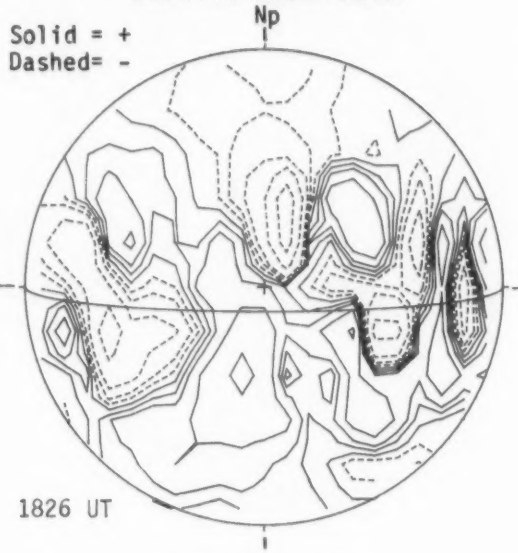
# O C T O B E R 13, 1 9 8 3 (P= 26.30, $B_0$= 6.04, $L_0$= 76.24)

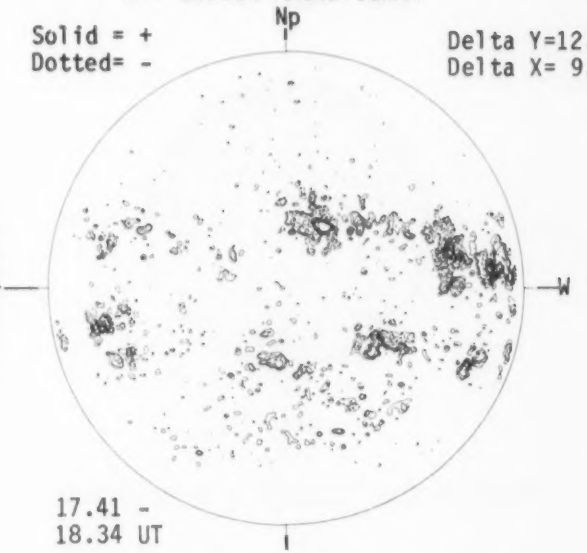
KITT PEAK MAGNETOGRAM



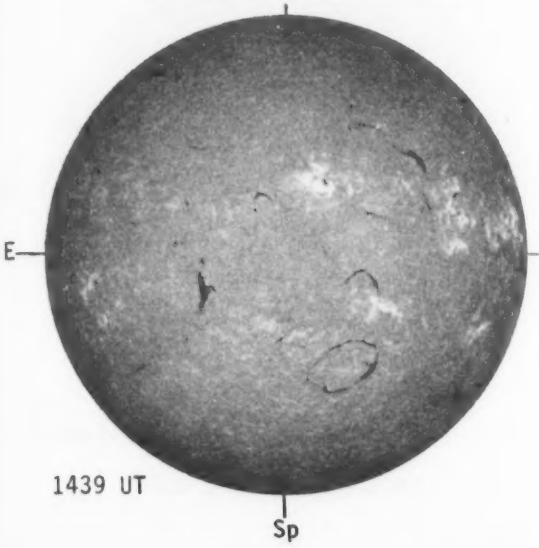

STANFORD MAGNETOGRAM



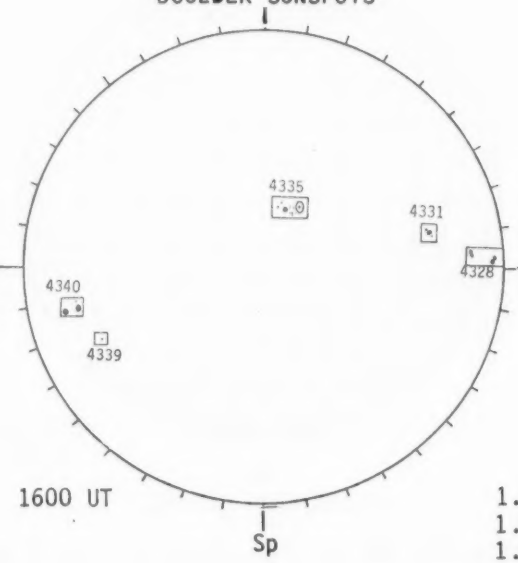

MT. WILSON MAGNETOGRAM



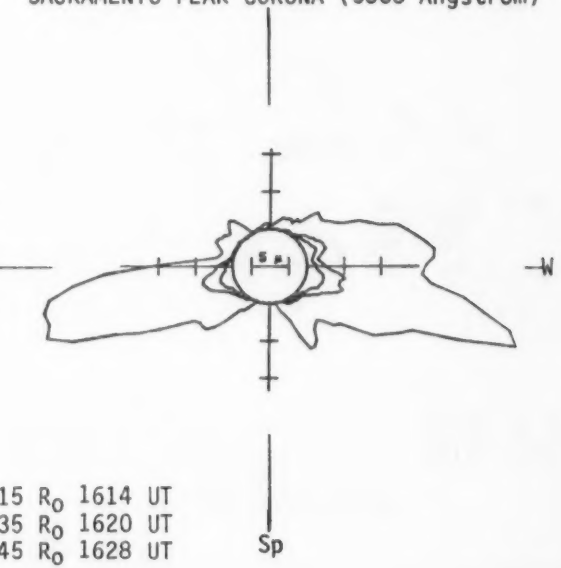

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)



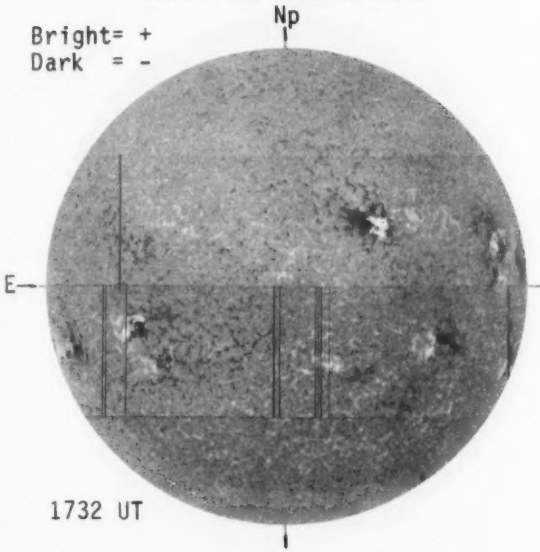

# O C T O B E R 14, 1 9 8 3 (P= 26.29, $B_0$= 5.97, $L_0$= 63.05)

1.45 $R_O$ 1628 UT

# O C T O B E R 14, 1 9 8 3 (P= 26.29, $B_O$= 5.97, $L_O$= 63.05)

KITT PEAK MAGNETOGRAM

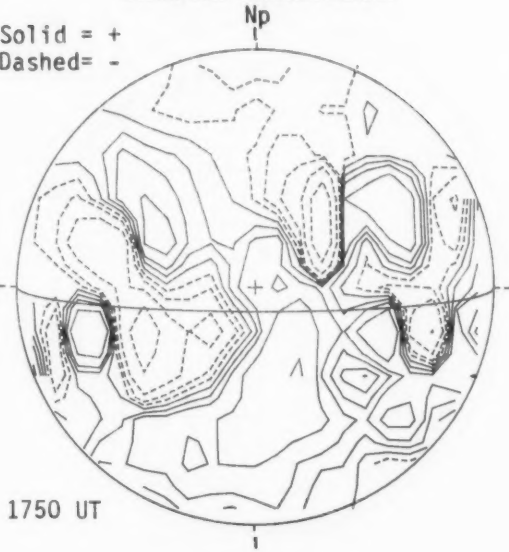
Bright= +
Dark = -




1732 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

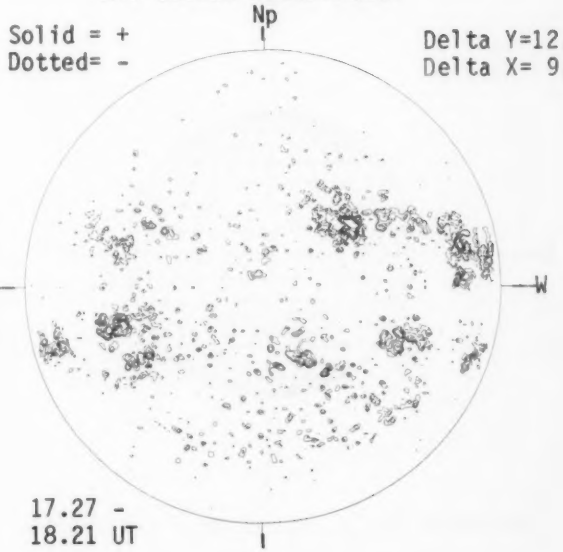



1750 UT

MT. WILSON MAGNETOGRAM

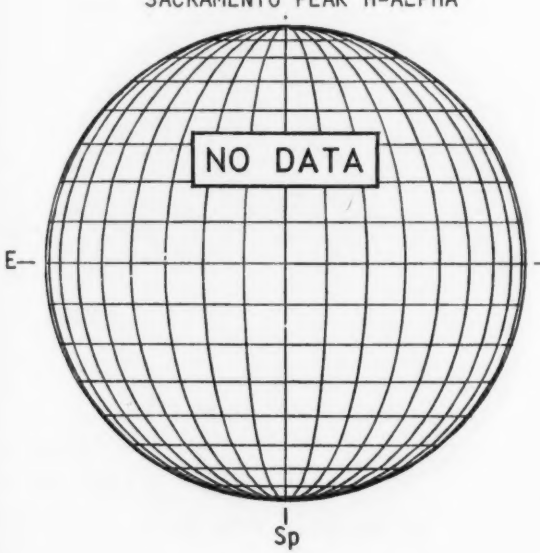
Solid = +
Dotted= -

Delta Y=12.6
Delta X= 9.6

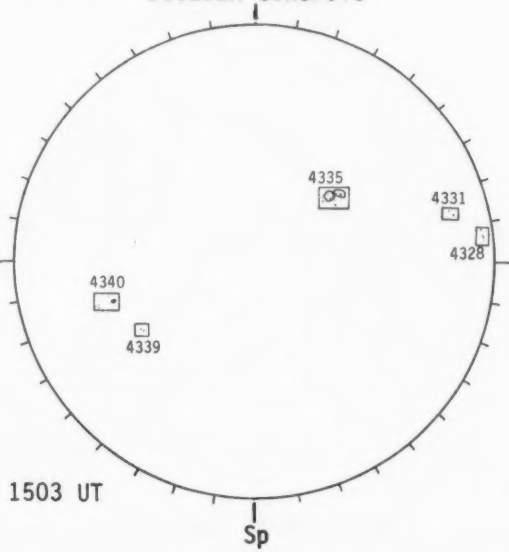



17.27 -
18.21 UT

SACRAMENTO PEAK H-ALPHA

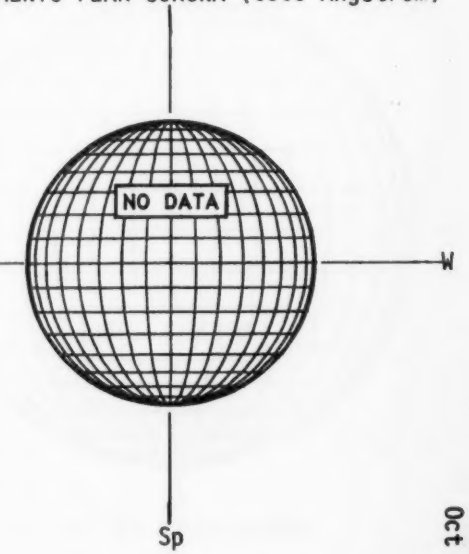



BOULDER SUNSPOTS




1503 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)

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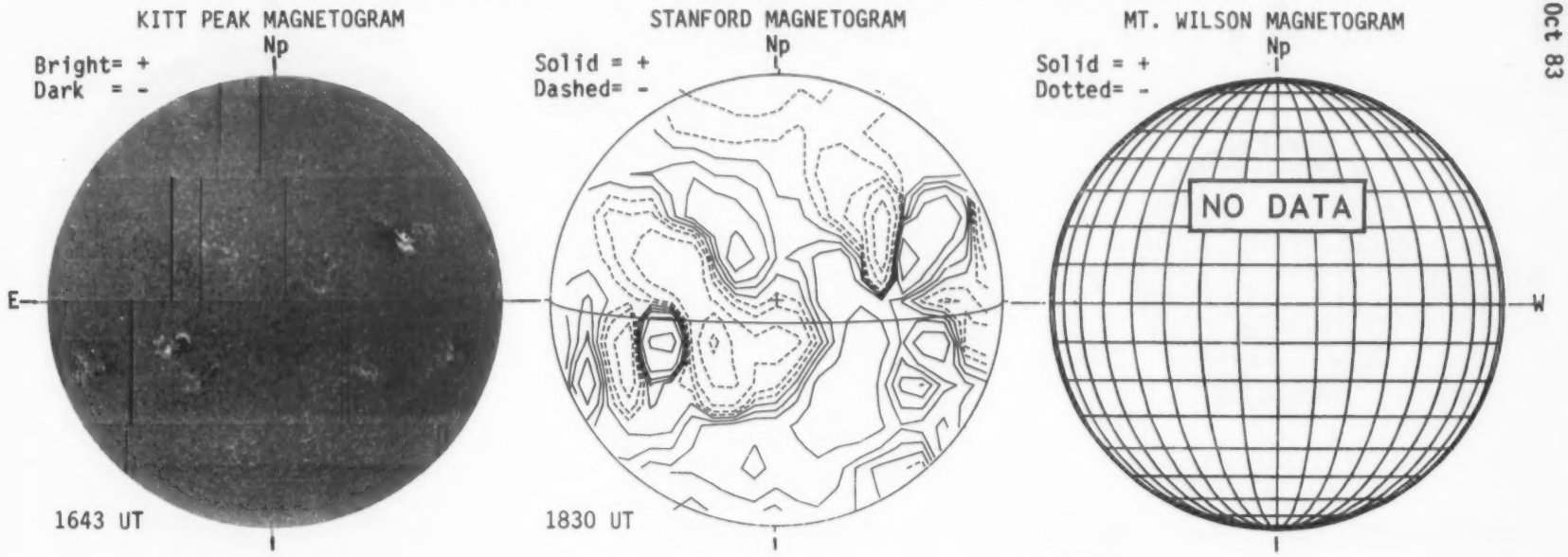
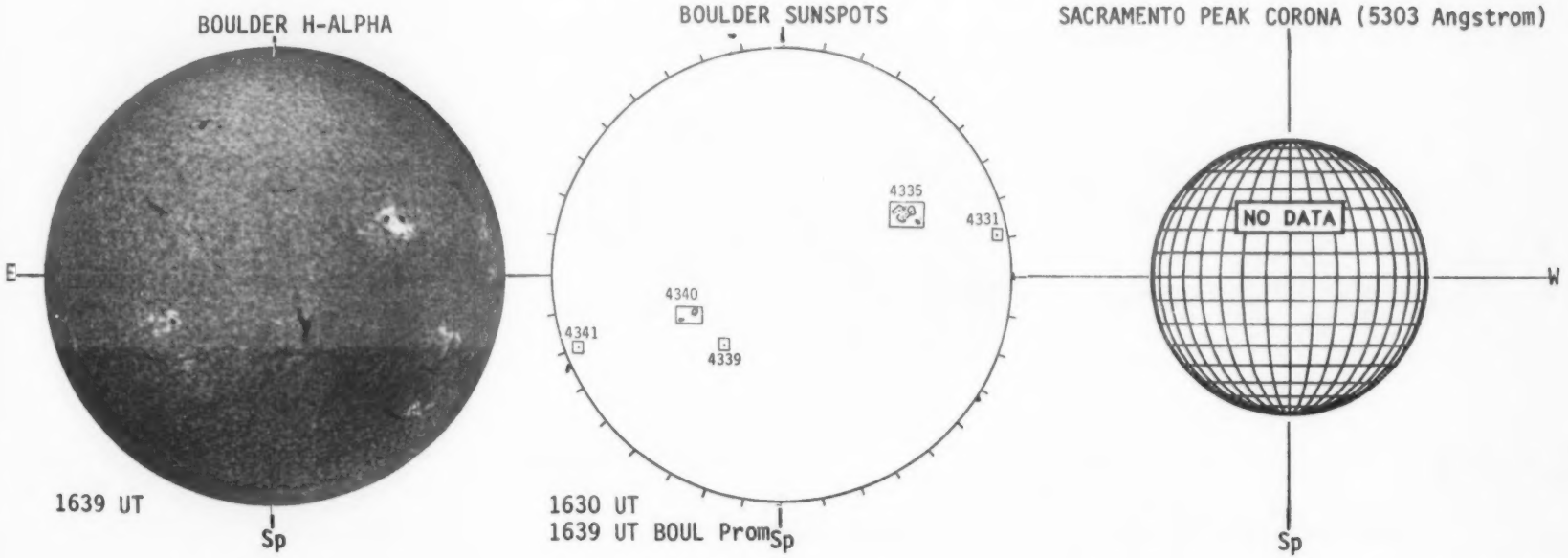
# O C T O B E R 15, 1 9 8 3 (P= 26.26, $B_o$= 5.89, $L_o$= 49.86)



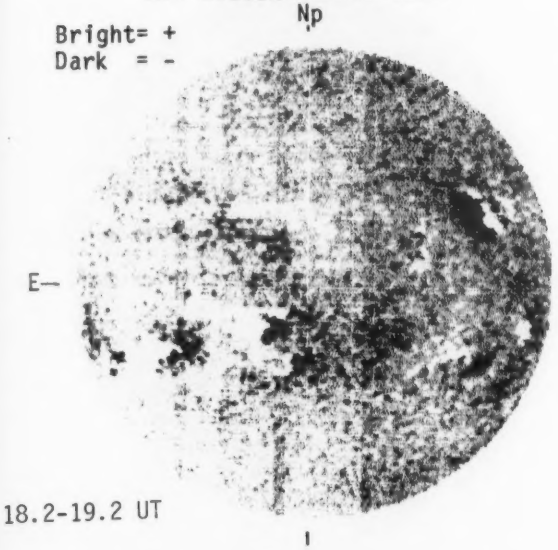




# O C T O B E R 16, 1 9 8 3 (P= 26.22, $B_o$= 5.82, $L_o$= 36.67)

# O C T O B E R 16, 1 9 8 3 (P= 26.22, $B_o$= 5.82, $L_o$= 36.67)

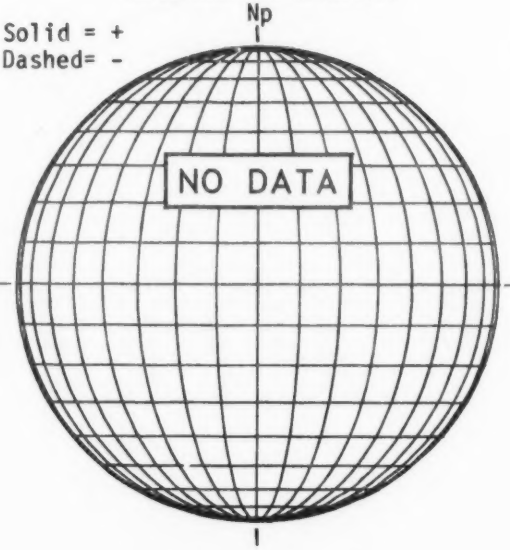
MT. WILSON MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

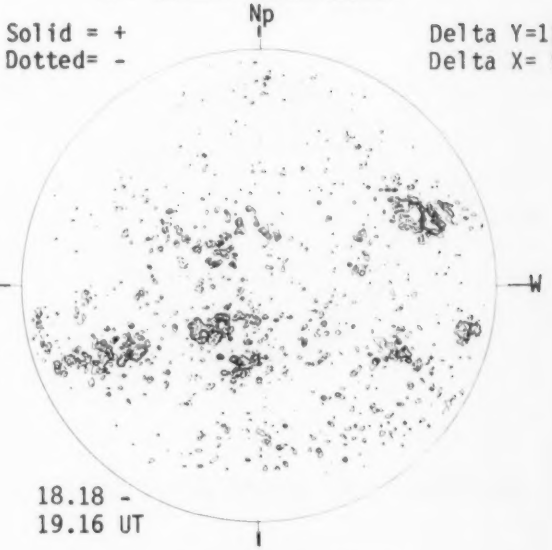
Solid = +
Dashed= -



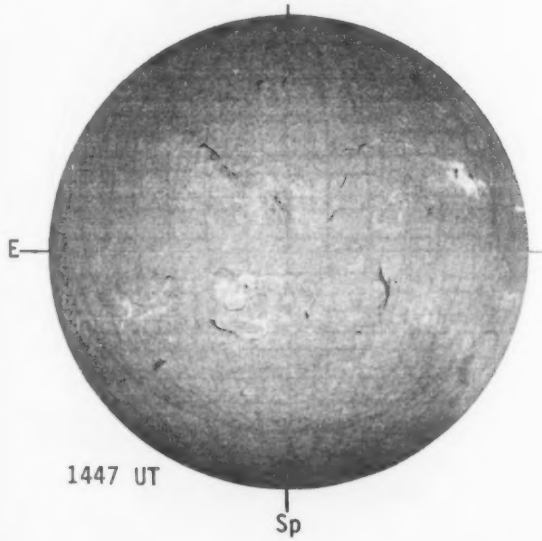

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

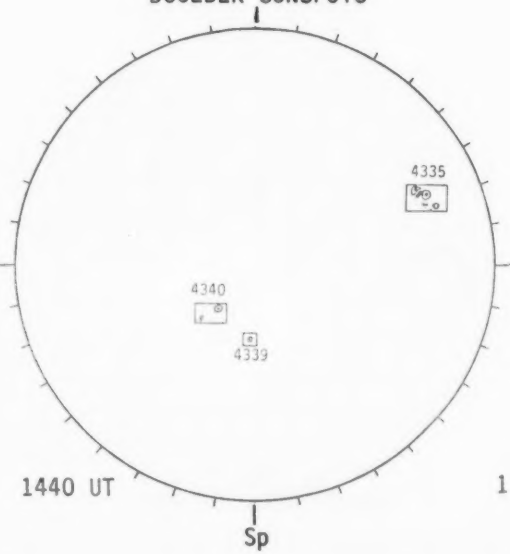
Delta Y=12.6
Delta X= 9.6



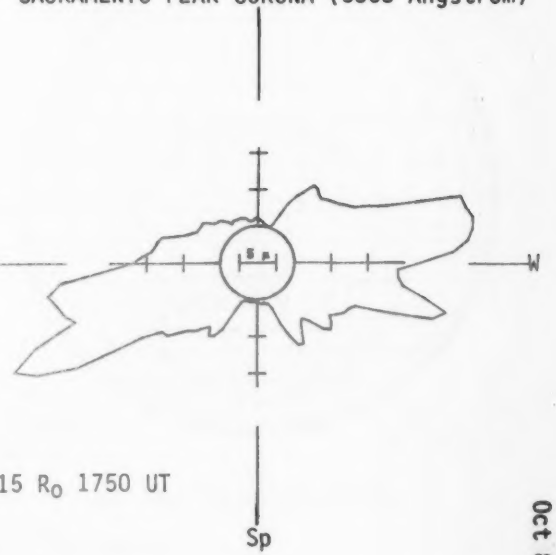

SACRAMENTO PEAK H-ALPHA



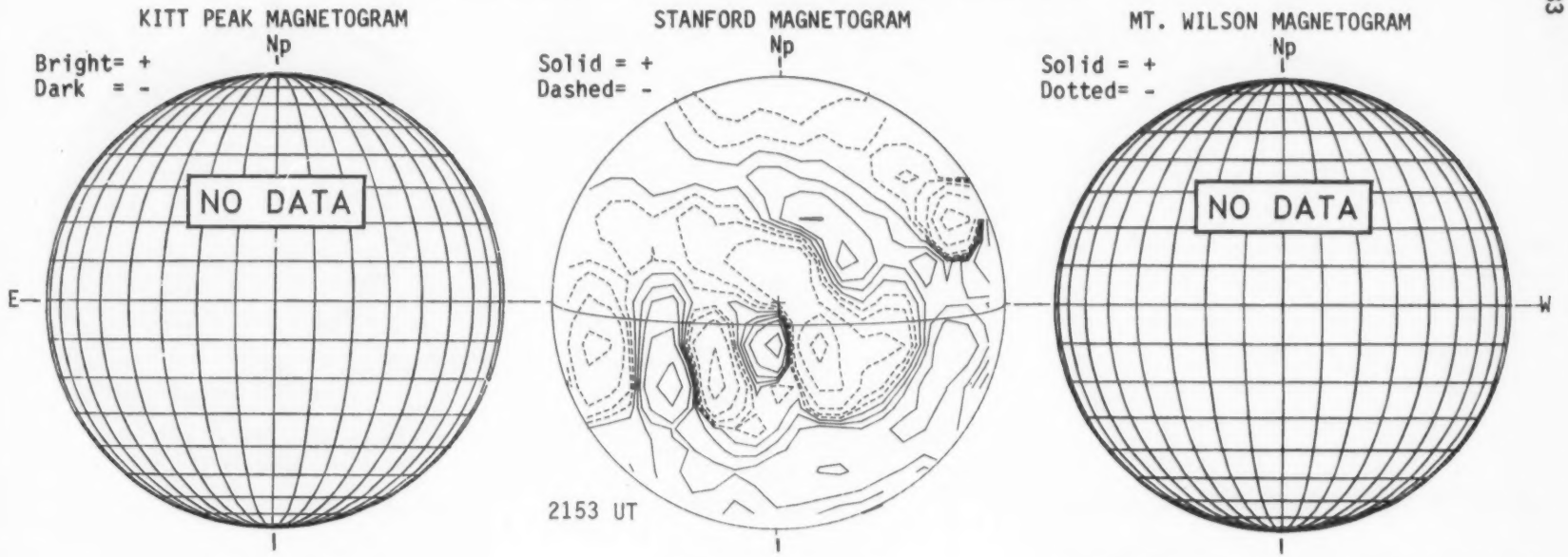

BOULDER SUNSPOTS

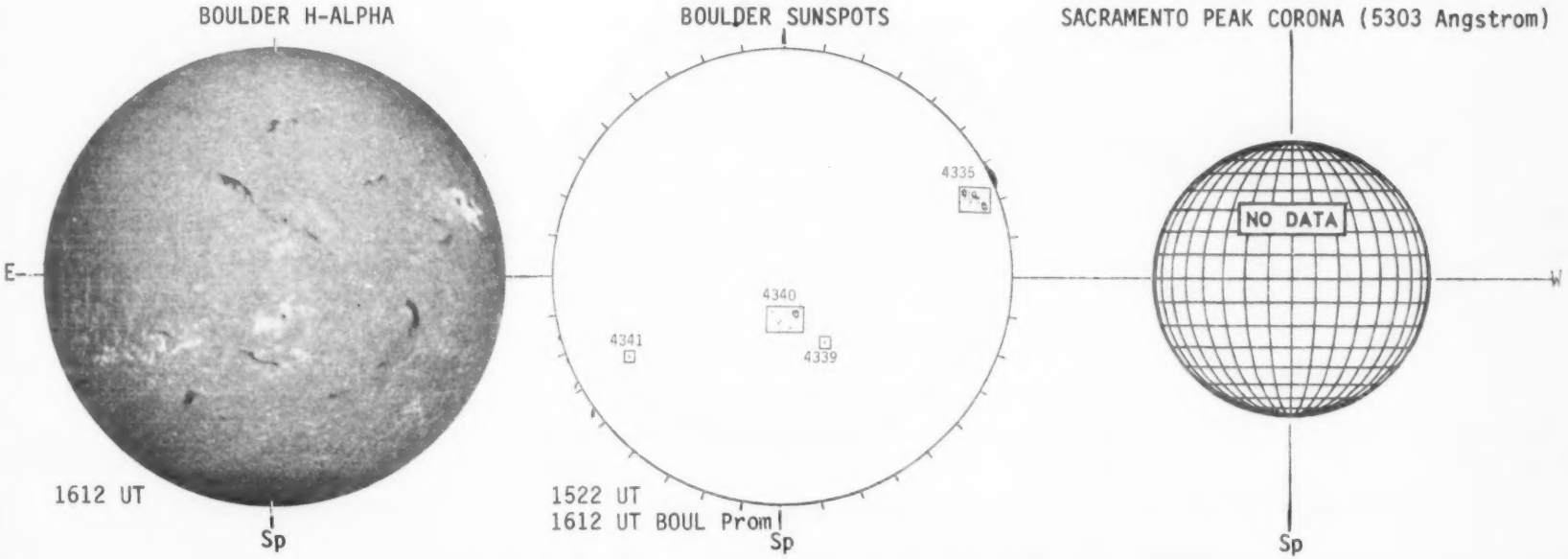



SACRAMENTO PEAK CORONA (5303 Angstrom)



# O C T O B E R 17, 1 9 8 3 (P= 26.18, $B_0$= 5.74, $L_0$= 23.48)



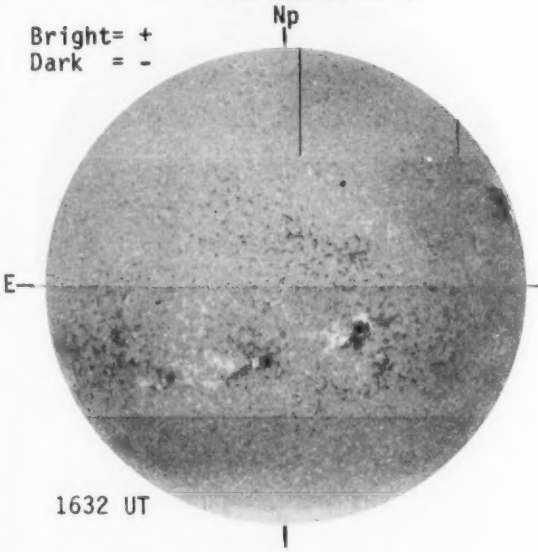

# O C T O B E R 18, 1 9 8 3 (P= 26.13, $B_0$= 5.67, $L_0$= 10.29)

Sp

O C T O B E R 18, 1 9 8 3 (P= 26.13, $B_0$= 5.67, $L_0$= 10.29)

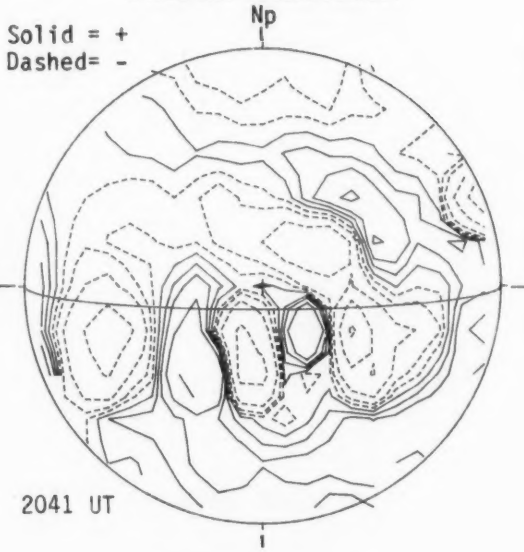
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

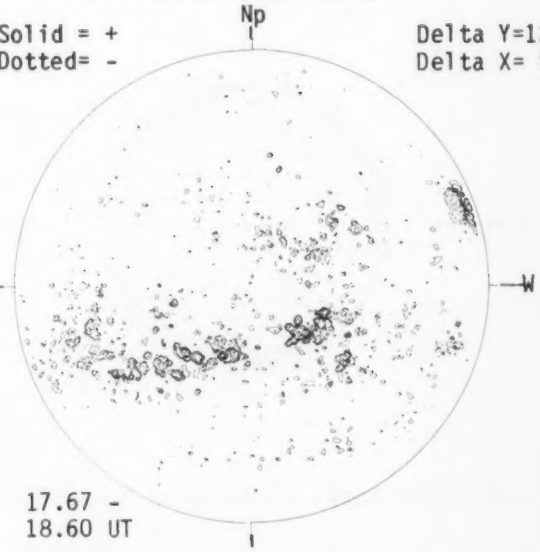
Solid = +
Dashed= -



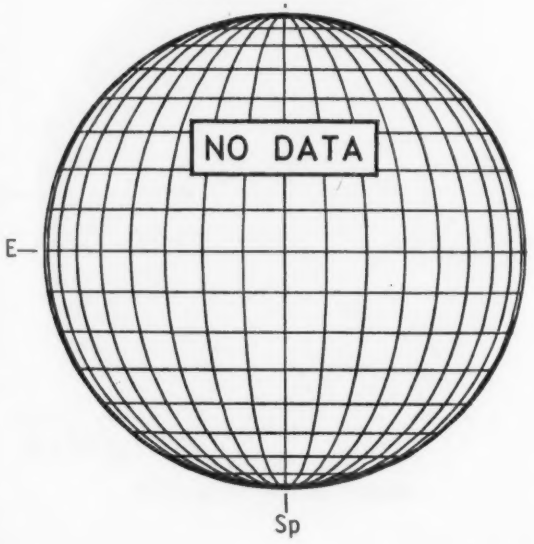

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

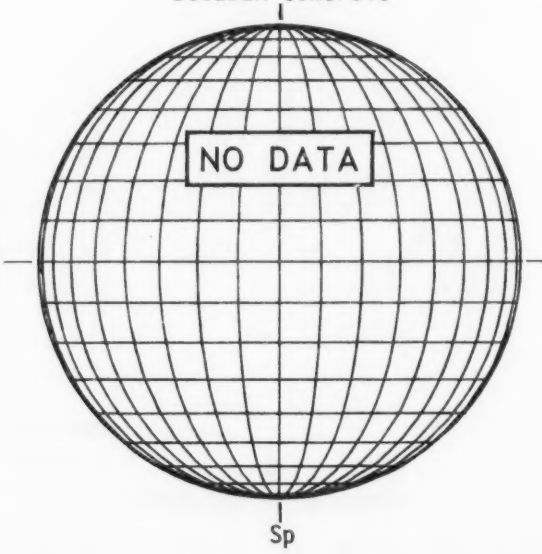
Delta Y=12.6
Delta X= 9.6



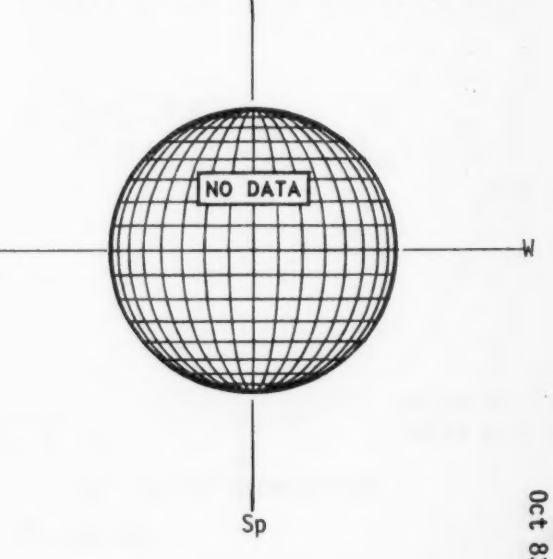

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS



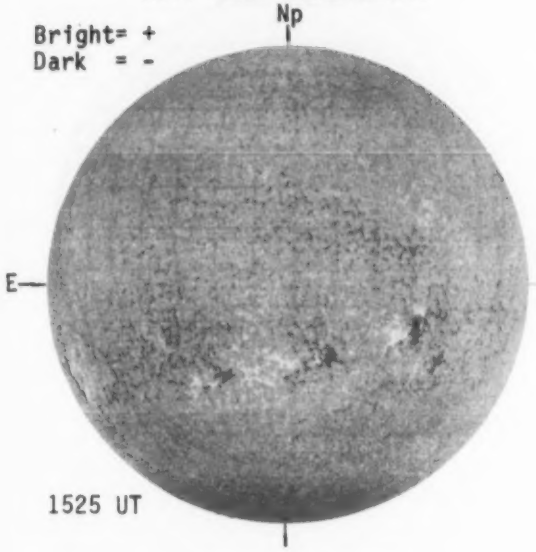

SACRAMENTO PEAK CORONA (5303 Angstrom)



## O C T O B E R 19, 1 9 8 3 (P= 26.08, $B_o$= 5.59, $L_o$= 357.10)

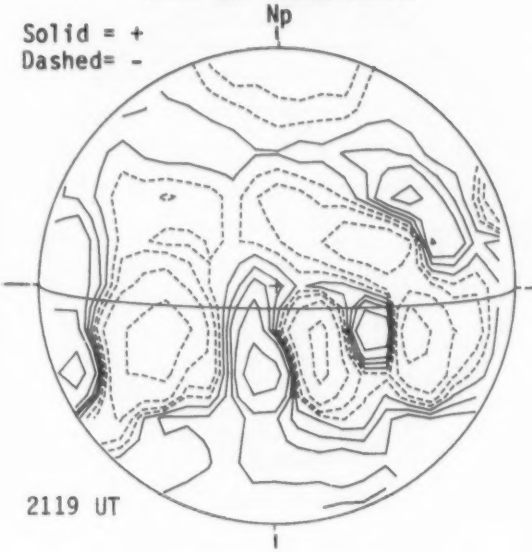
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

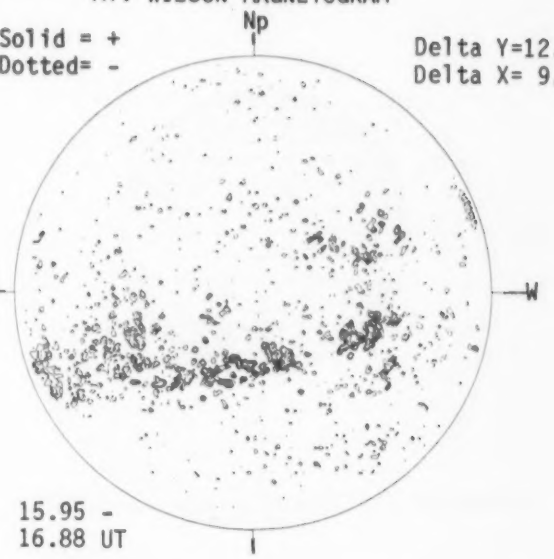
Solid = +
Dashed= -



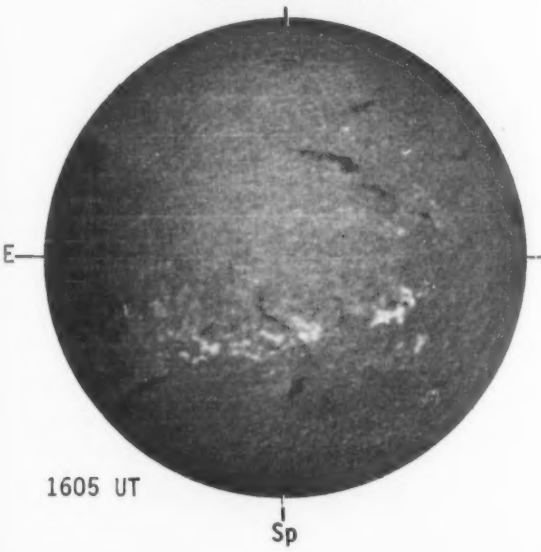

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

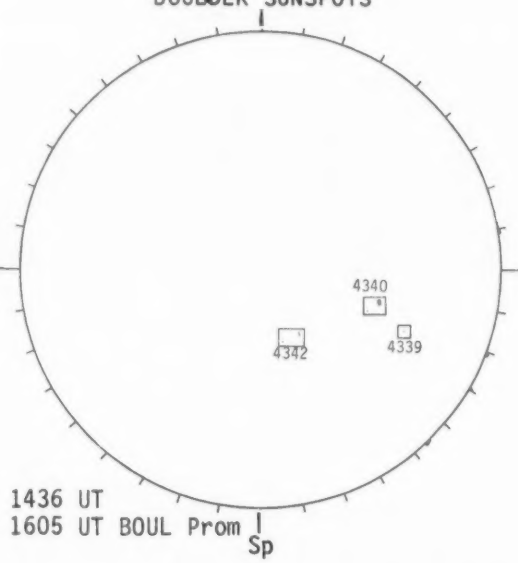
Delta Y=12.7
Delta X= 9.6



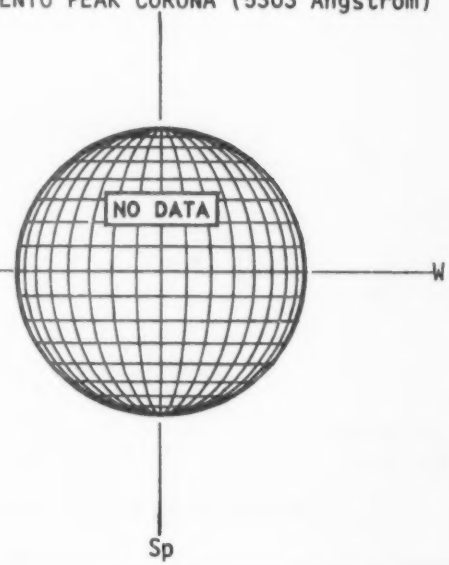

BOULDER H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)



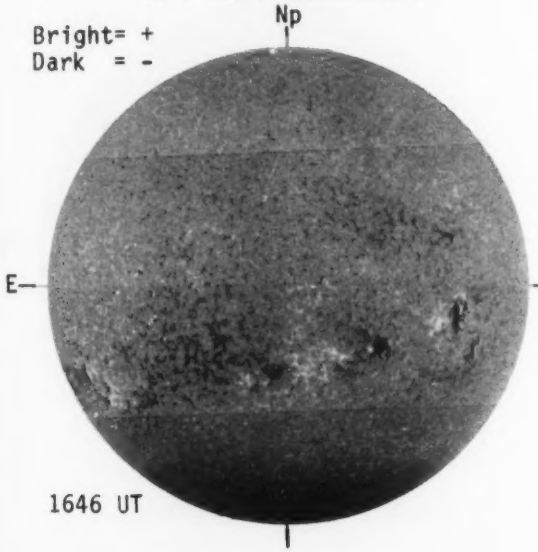

## O C T O B E R 20, 1 9 8 3 (P= 26.01, $B_o$= 5.51, $L_o$= 343.91)

Sp

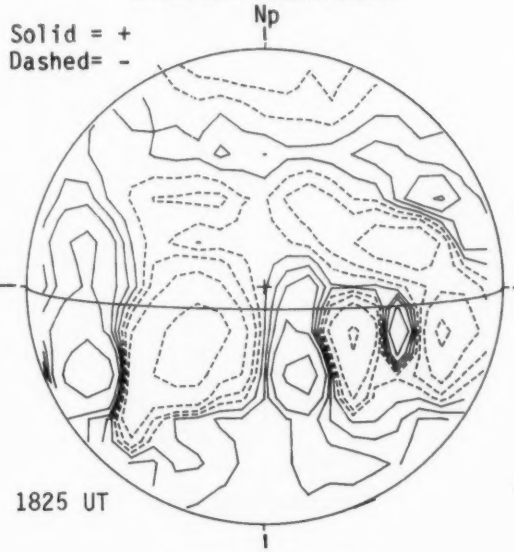
Sp

O C T O B E R 20, 1 9 8 3 (P= 26.01, $B_o$= 5.51, $L_o$= 343.91)

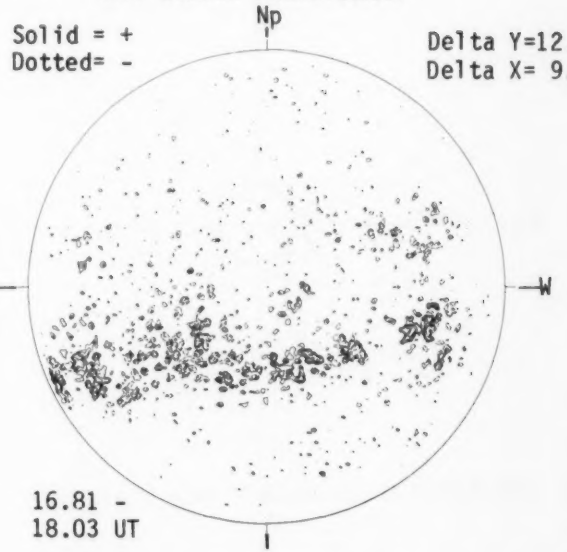
KITT PEAK MAGNETOGRAM



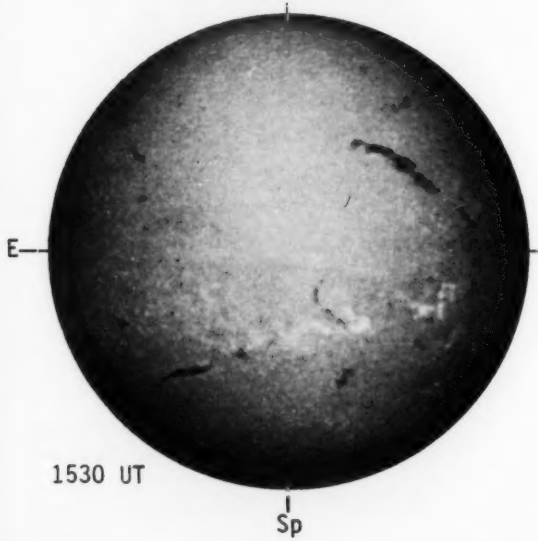

STANFORD MAGNETOGRAM



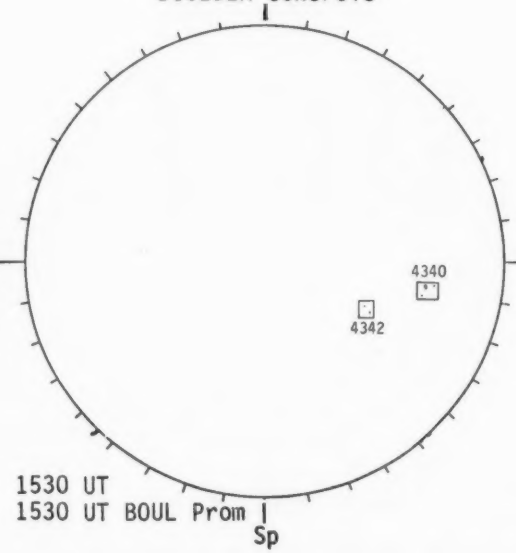

MT. WILSON MAGNETOGRAM



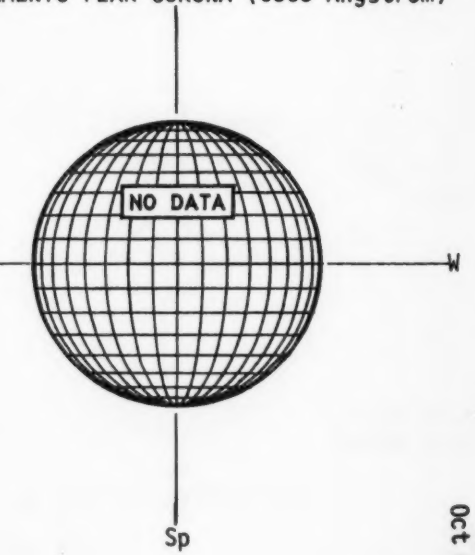

BOULDER H-ALHPA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)

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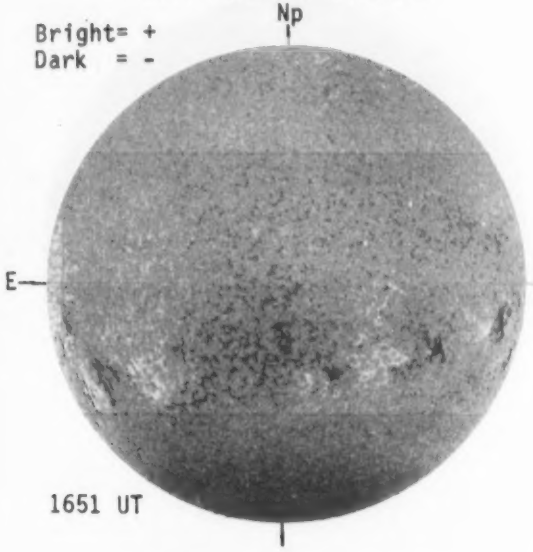
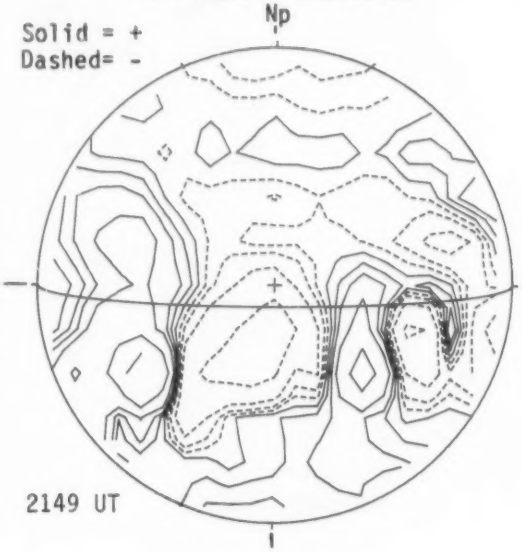
## O C T O B E R 21, 1 9 8 3 (P= 25.94, $B_o$= 5.42, $L_o$= 330.72)

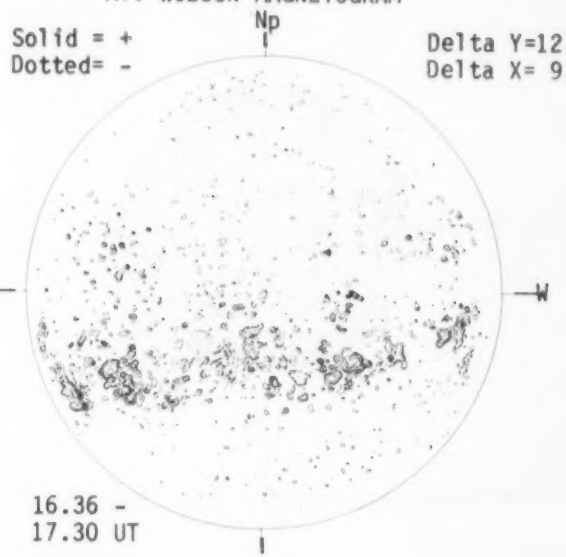
KITT PEAK MAGNETOGRAM



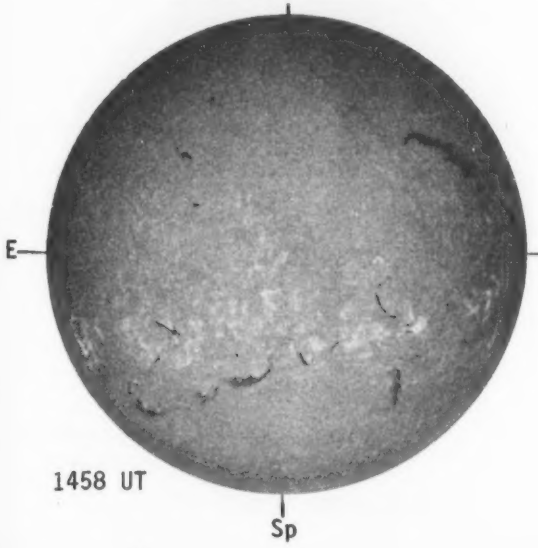

STANFORD MAGNETOGRAM



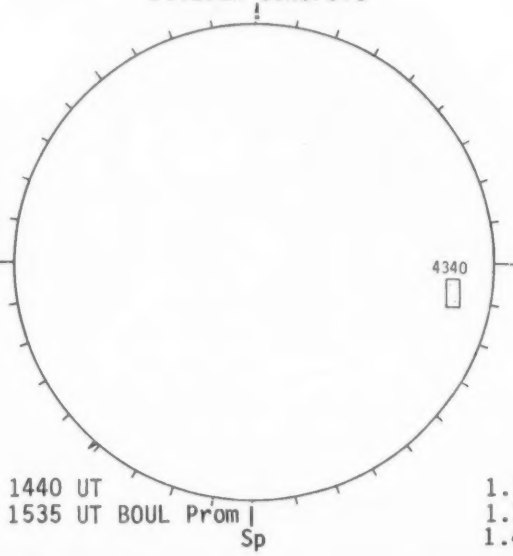

MT. WILSON MAGNETOGRAM



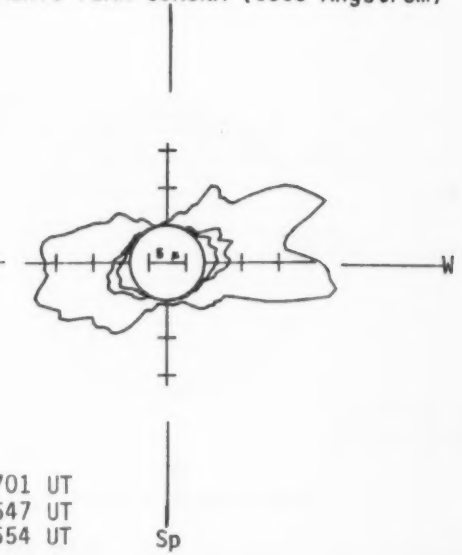

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)




## O C T O B E R 22, 1 9 8 3 (P= 25.86, $B_o$= 5.34, $L_o$= 317.53)

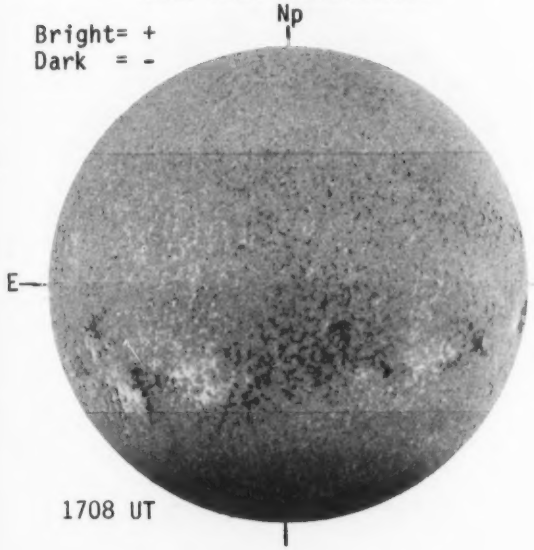
KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

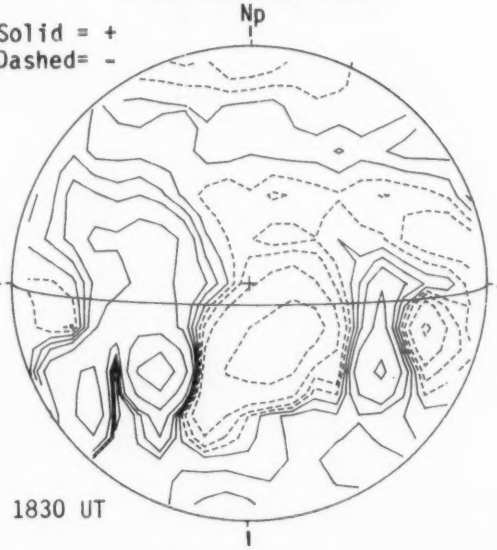
MT. WILSON MAGNETOGRAM

# O C T O B E R 22, 1 9 8 3 (P= 25.86, $B_o$= 5.34, $L_o$= 317.53)

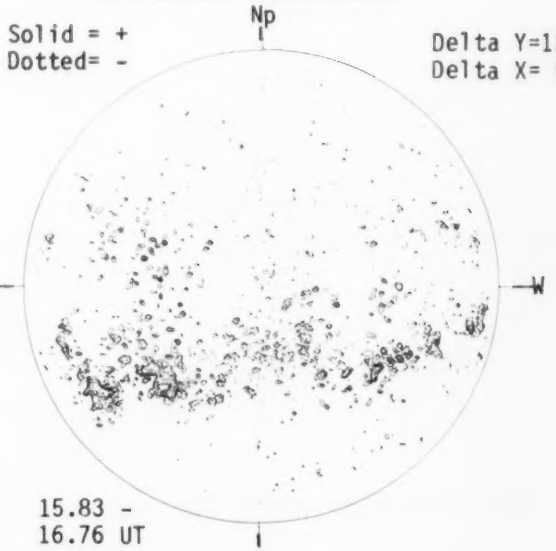
## KITT PEAK MAGNETOGRAM



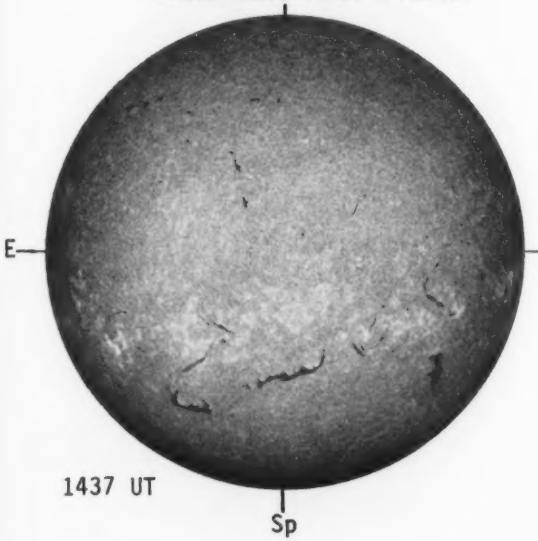

## STANFORD MAGNETOGRAM



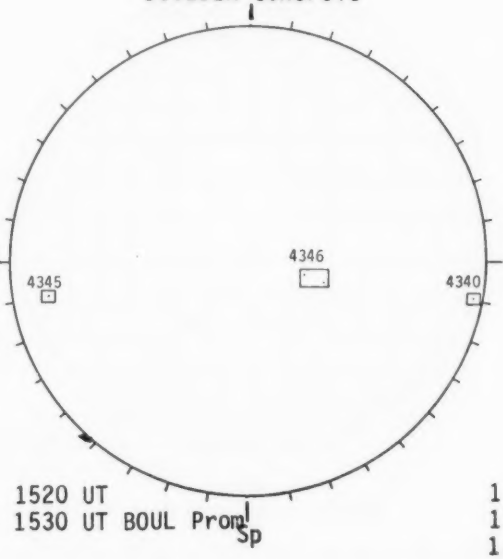

## MT. WILSON MAGNETOGRAM



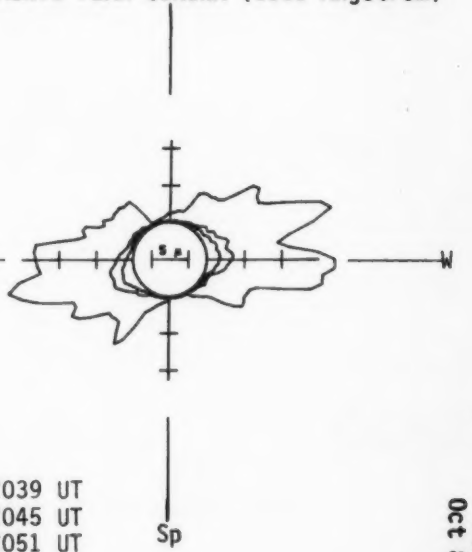

## SACRAMENTO PEAK H-ALPHA




## BOULDER SUNSPOTS




## SACRAMENTO PEAK CORONA (5303 Angstrom)

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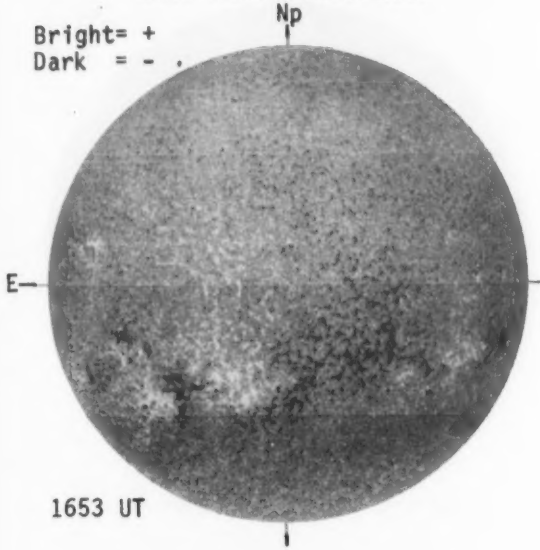
## O C T O B E R 23, 1 9 8 3 (P= 25.77, $B_o$= 5.25, $L_o$= 304.34)

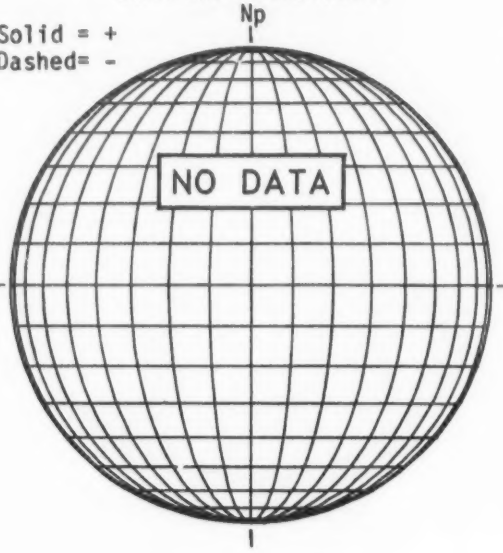
KITT PEAK MAGNETOGRAM

Bright= +
Dark = - .




STANFORD MAGNETOGRAM

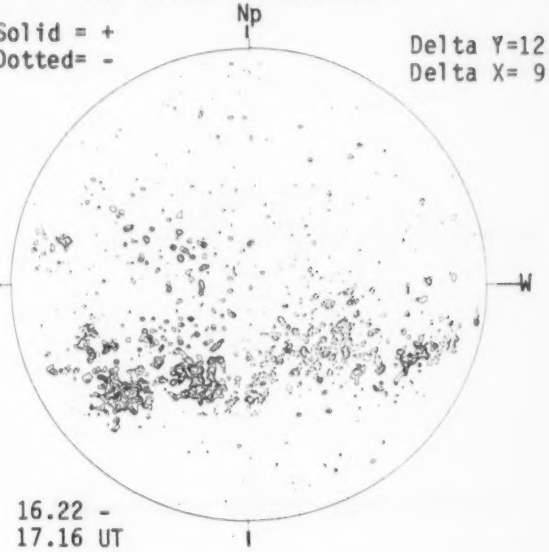
Solid = +
Dashed= -



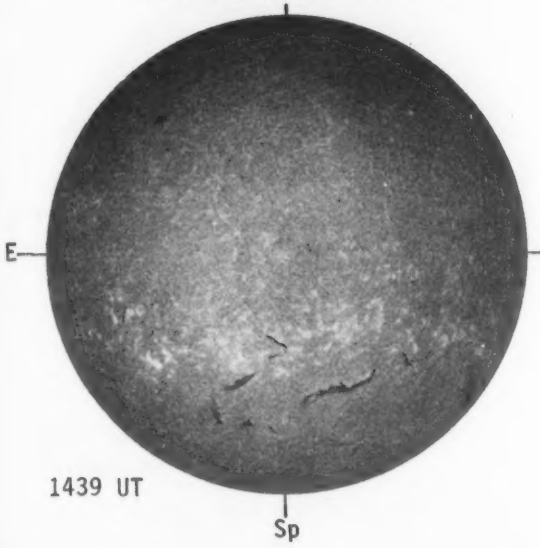

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

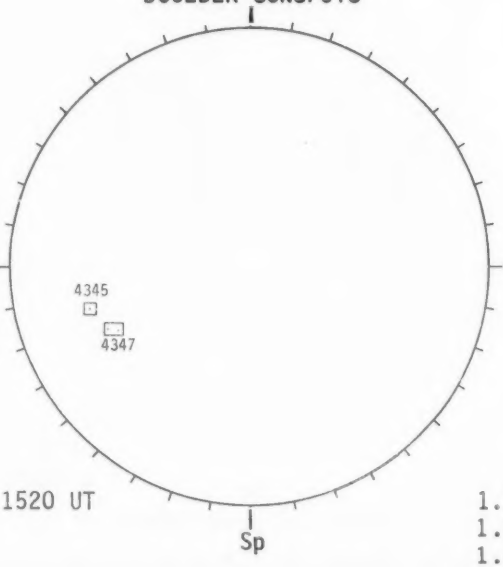
Delta Y=12.7
Delta X= 9.6



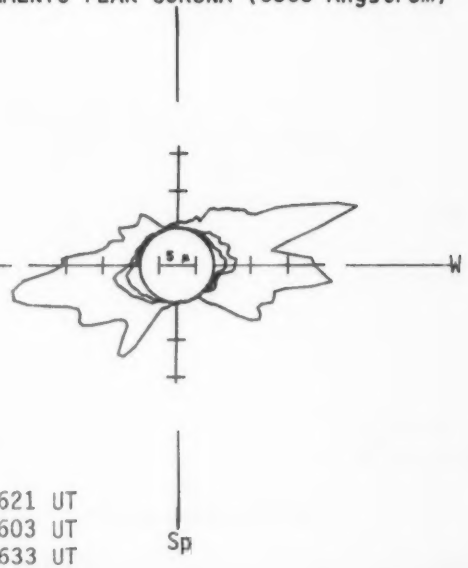

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)




## O C T O B E R 24, 1 9 8 3 (P= 25.67, $B_o$= 5.17, $L_o$= 291.15)

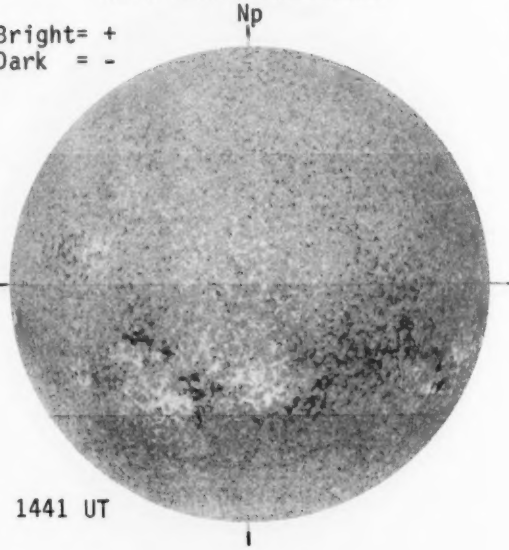
Sp Sp

1.45 $R_o$ 1633 UT

# O C T O B E R 24, 1 9 8 3 (P= 25.67, $B_o$= 5.17, $L_o$= 291.15)

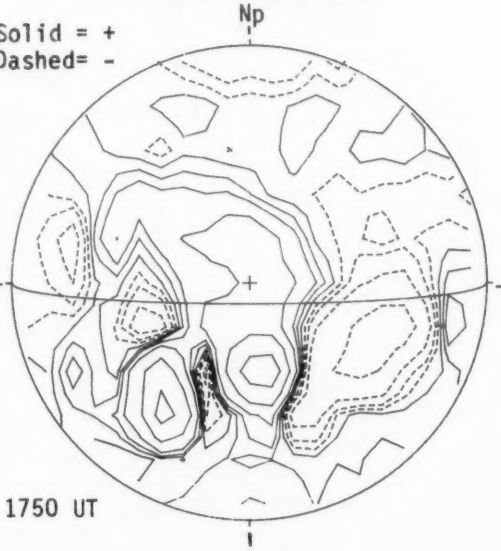
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

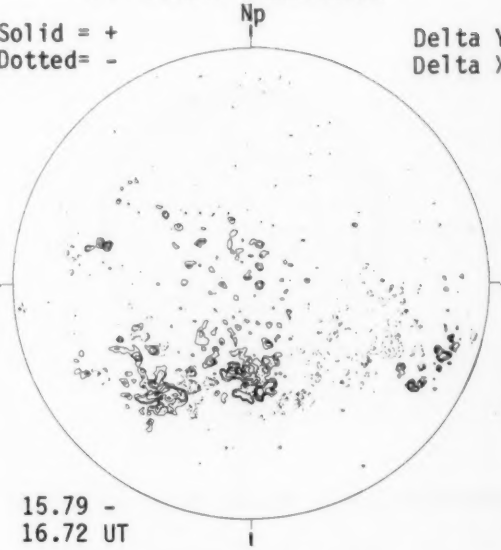
Solid = +
Dashed= -



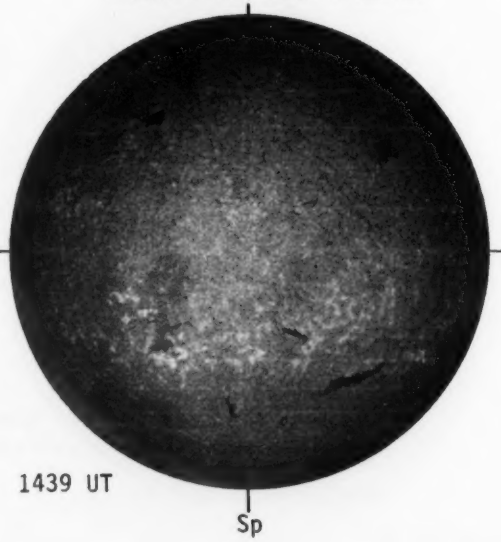

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

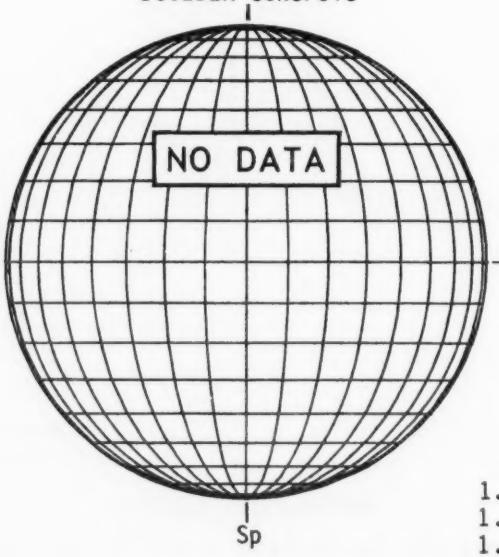
Delta Y=12.7
Delta X= 9.6



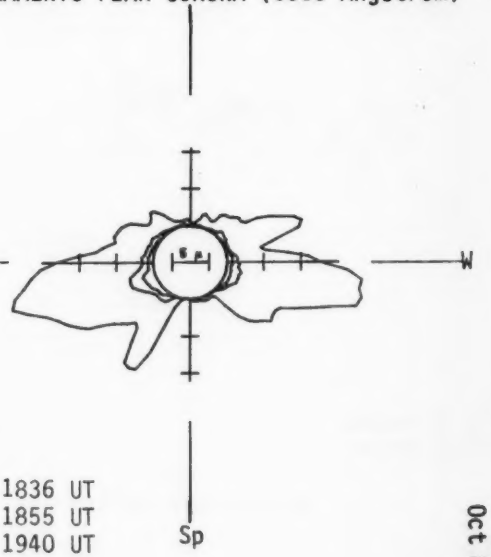

SACRAMENTO PEAK H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)




1.15 $R_o$ 1836 UT
1.35 $R_o$ 1855 UT
1.45 $R_o$ 1940 UT

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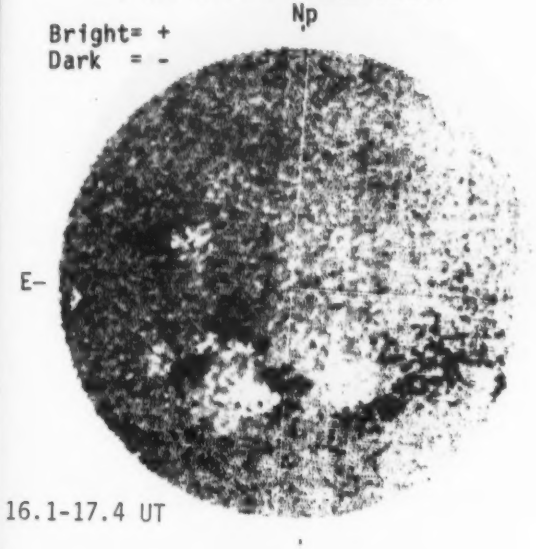
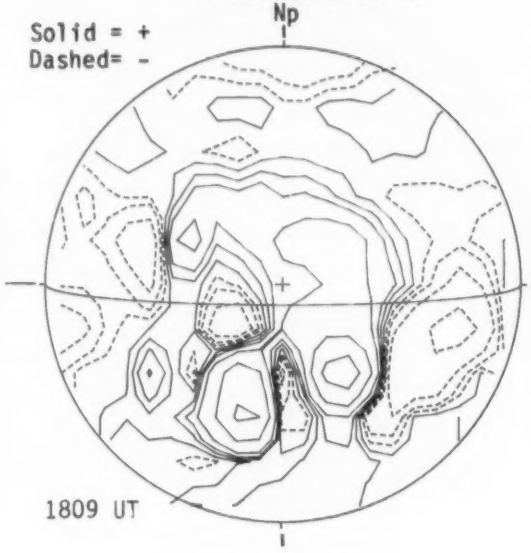
## O C T O B E R  25,  1 9 8 3  (P= 25.57, $B_0$= 5.08, $L_0$= 277.96)

MT. WILSON MAGNETOGRAM



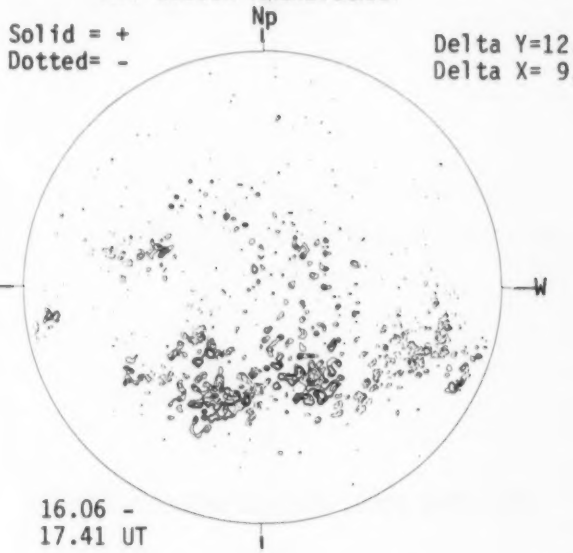

16.1-17.4 UT

STANFORD MAGNETOGRAM



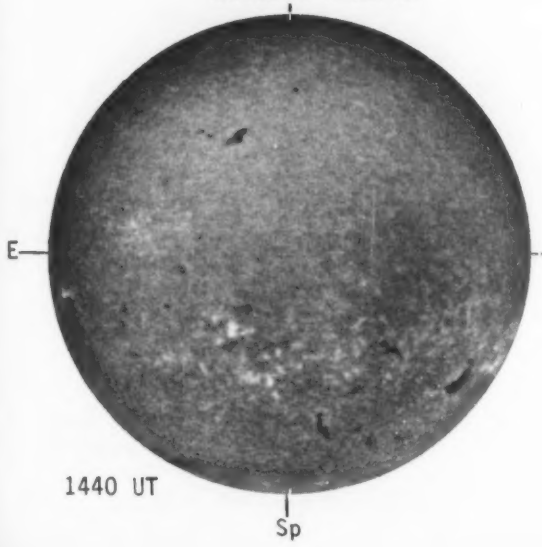

1809 UT

MT. WILSON MAGNETOGRAM



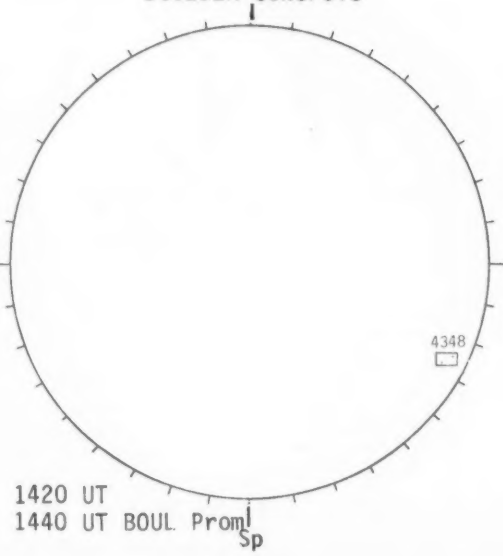

16.06 -
17.41 UT

BOULDER H-ALPHA



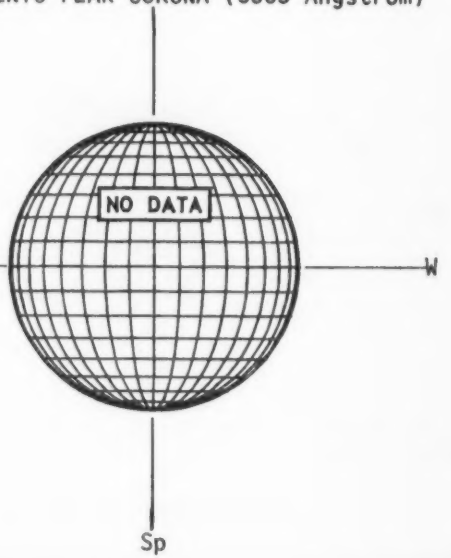

1440 UT

BOULDER SUNSPOTS




1420 UT
1440 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)




## O C T O B E R  26,  1 9 8 3  (P= 25.46, $B_0$= 4.99, $L_0$= 264.77)

Sp Sp Sp

O C T O B E R 26, 1 9 8 3 (P= 25.46, $B_o$= 4.99, $L_o$= 264.77)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

NO DATA

E

Sp

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

1806 UT

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Np

Delta Y=12.7
Delta X= 9.6

W

15.77 -
16.71 UT

SACRAMENTO PEAK H-ALPHA

E

1446 UT

Sp

BOULDER SUNSPOTS

4349

4344

1511 UT
1515 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

W

1.15 $R_o$ 1615 UT
1.35 $R_o$ 1622 UT
1.45 $R_o$ 1629 UT

Sp

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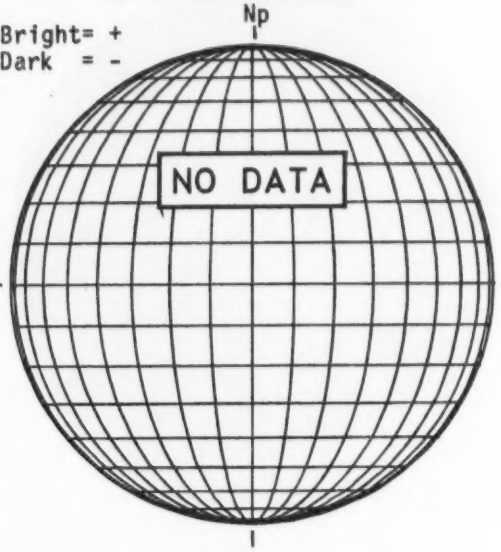
# O C T O B E R  27,  1 9 8 3  (P= 25.34, $B_0$= 4.89, $L_0$= 251.58)

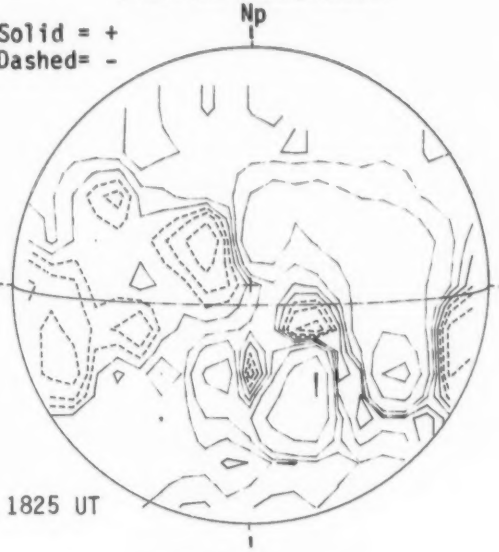
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -




STANFORD MAGNETOGRAM

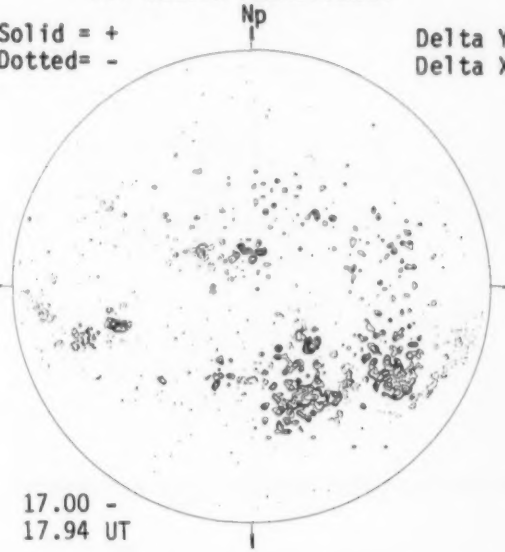
Solid = +
Dashed= -



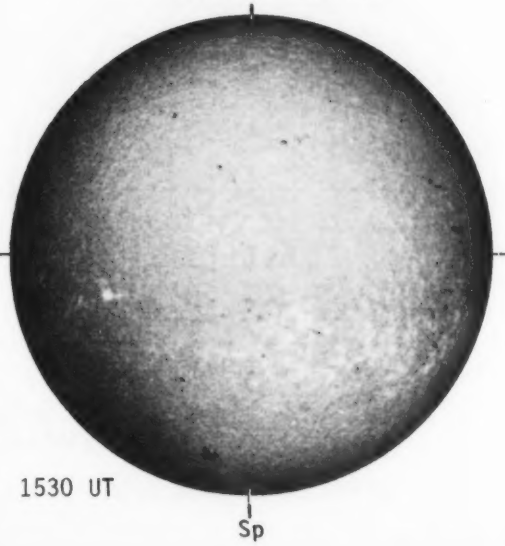

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

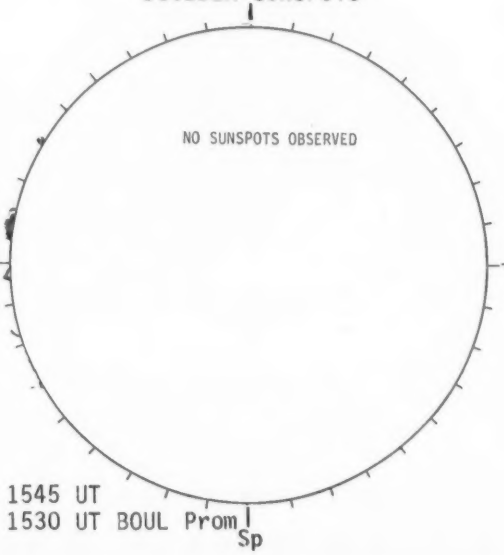
Delta Y=12.6
Delta X= 9.6



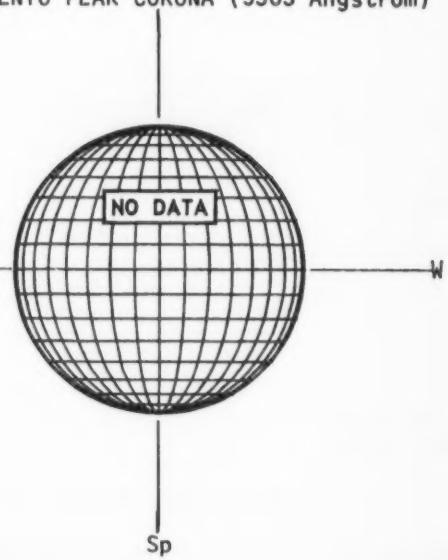

BOULDER H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)



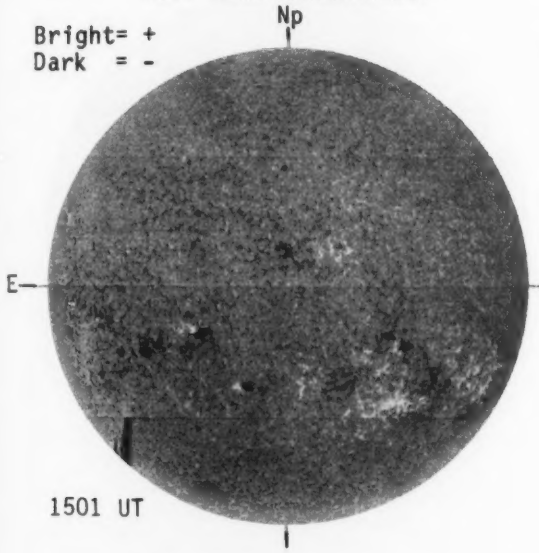

# O C T O B E R  28,  1 9 8 3  (P= 25.21, $B_0$= 4.80, $L_0$= 238.40)

Sp Sp Sp

O C T O B E R 28, 1 9 8 3 (P= 25.21, $B_o$= 4.80, $L_o$= 238.40)

KITT PEAK MAGNETOGRAM

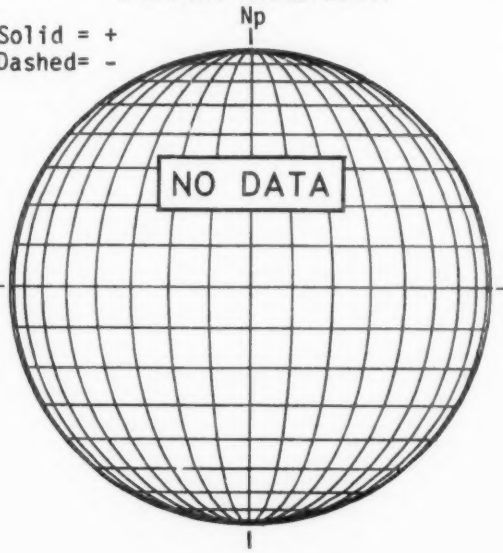
Bright= +
Dark = -




1501 UT

STANFORD MAGNETOGRAM

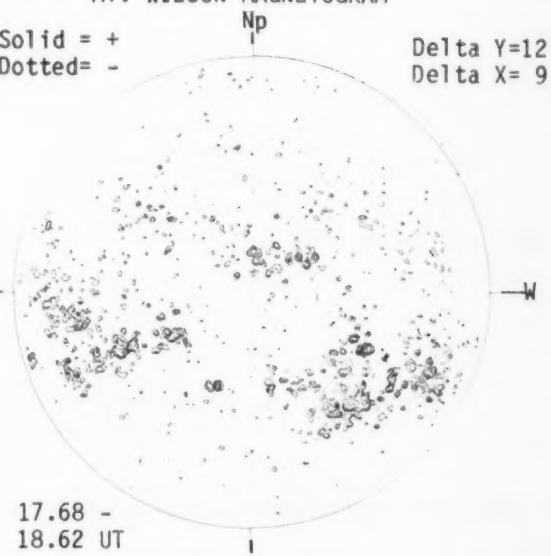
Solid = +
Dashed= -




MT. WILSON MAGNETOGRAM

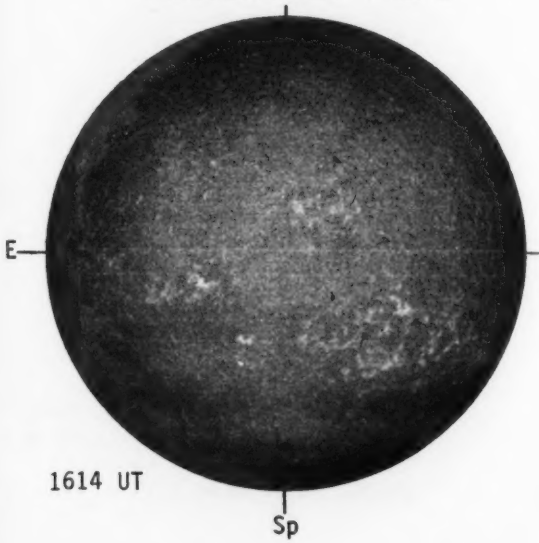
Solid = +
Dotted= -

Delta Y=12.6
Delta X= 9.6



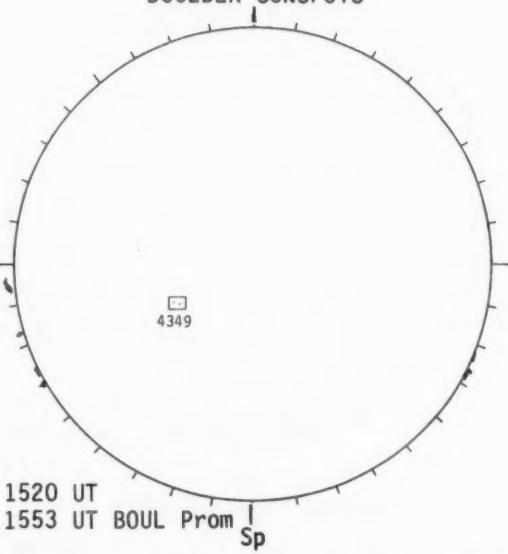

17.68 -
18.62 UT

SACRAMENTO PEAK H-ALPHA



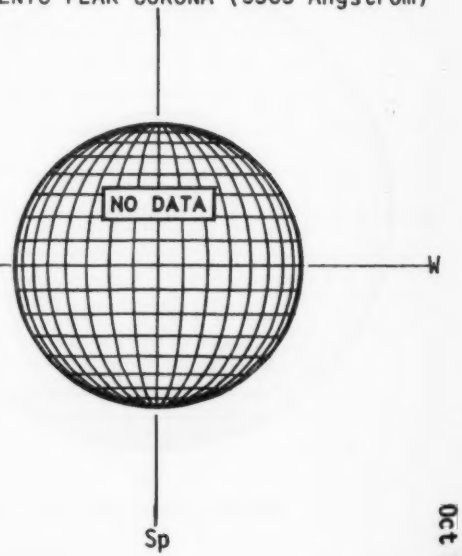

1614 UT

BOULDER SUNSPOTS




1520 UT
1553 UT BOUL Prom

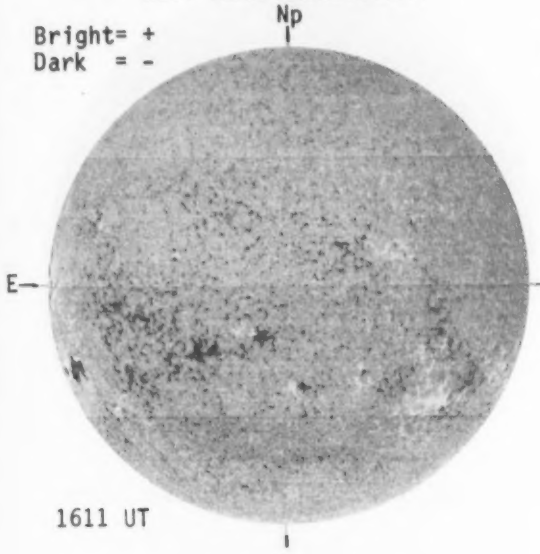
SACRAMENTO PEAK CORONA (5303 Angstrom)



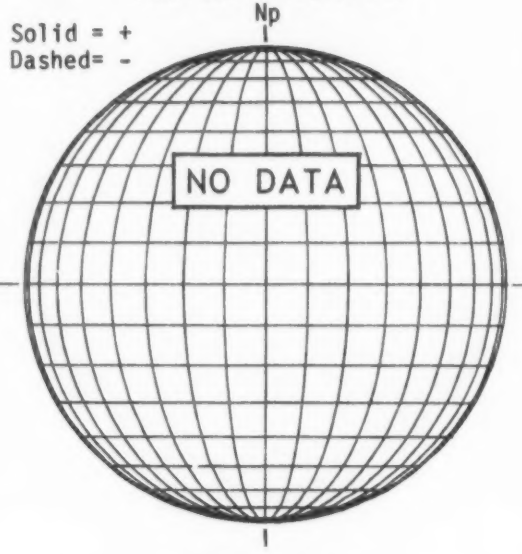

61
Oct 83

## O C T O B E R 29, 1 9 8 3 (P= 25.08, $B_o$= 4.71, $L_o$= 225.21)

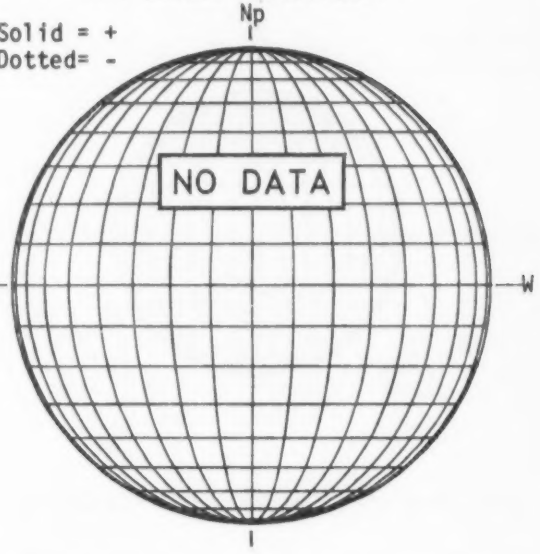
KITT PEAK MAGNETOGRAM



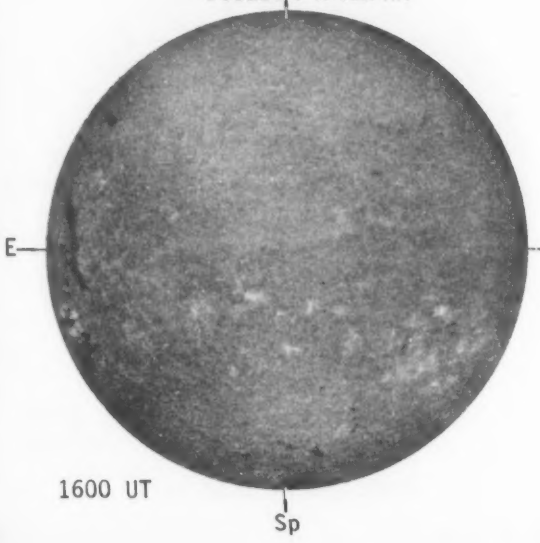

STANFORD MAGNETOGRAM



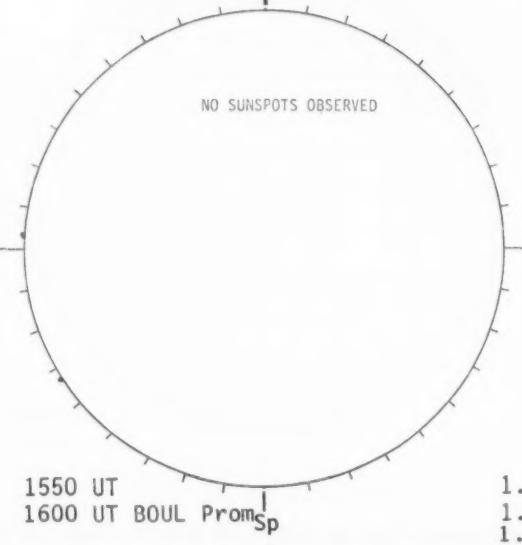

MT. WILSON MAGNETOGRAM



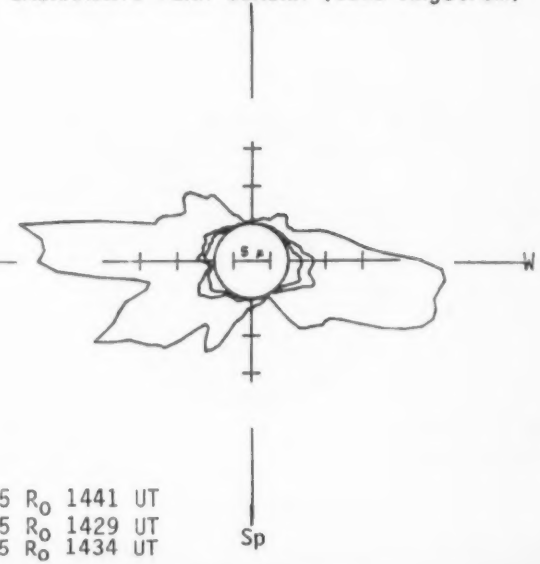

BOULDER H-ALPHA




BOULDER SUNSPOTS




SACRAMENTO PEAK CORONA (5303 Angstrom)




## O C T O B E R 30, 1 9 8 3 (P= 24.94, $B_o$= 4.61, $L_o$= 212.02)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

Sp

1600 UT BOUL Prom Sp

1.55 $R_o$ 1429 UT
1.45 $R_o$ 1434 UT

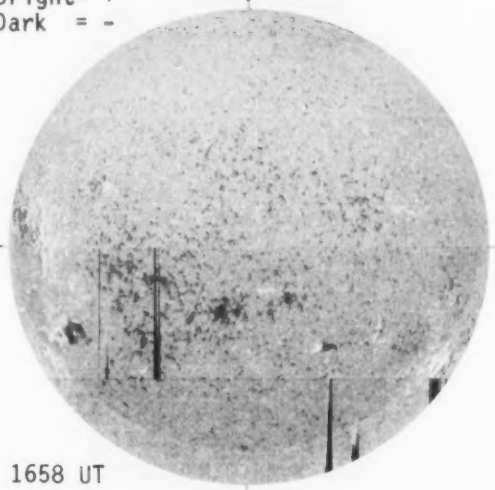
Sp

**O C T O B E R 30, 1 9 8 3 (P= 24.94, $B_o$= 4.61, $L_o$= 212.02)**

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



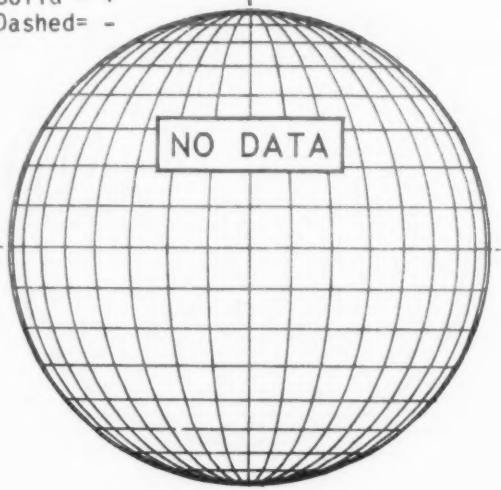
E

1658 UT

STANFORD MAGNETOGRAM

Np

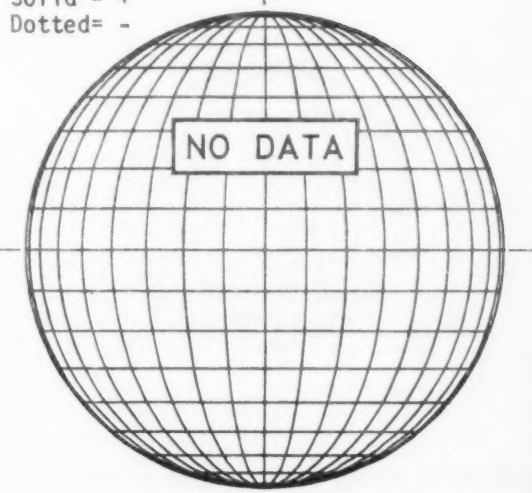
Solid = +
Dashed= -




MT. WILSON MAGNETOGRAM

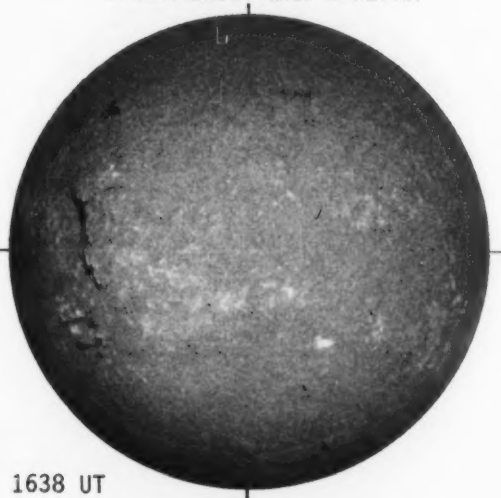
Np

Solid = +
Dotted= -




W

SACRAMENTO PEAK H-ALPHA

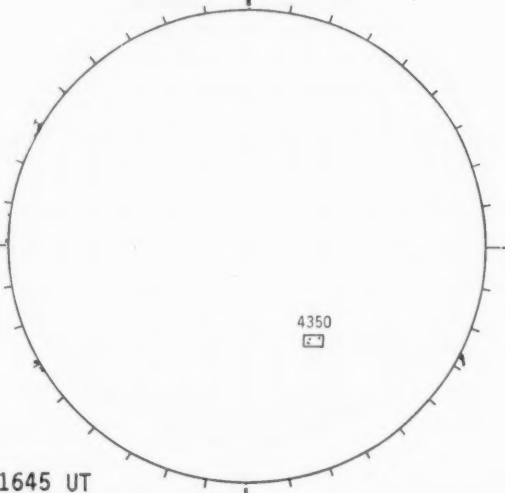


E

1638 UT

Sp

BOULDER SUNSPOTS




1645 UT
1655 UT BOUL Prom Sp

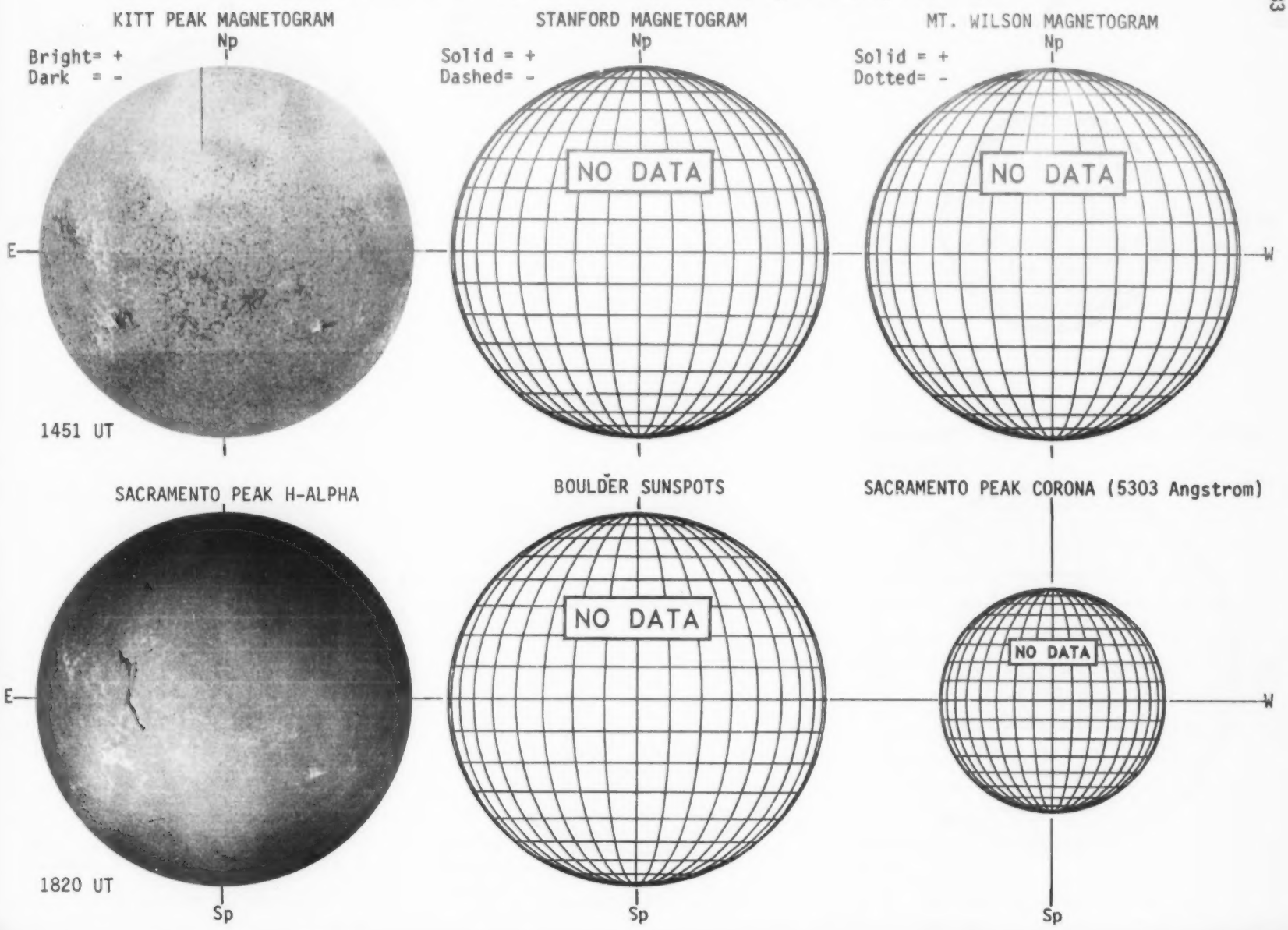
SACRAMENTO PEAK CORONA (5303 Angstrom)

W

Sp

63
Oct 83

# O C T O B E R 31, 1 9 8 3 (P= 24.79, $B_0$= 4.51, $L_0$= 198.84)



# REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LEAR | 10 | 02 | 0025 | N11 | E08 | 10 | 2.6 | | A | AXX | | 1 | 1 | 5 |
| 4330 | | HOLL | 10 | 01 | 2008 | N13 | E32 | 10 | 4.3 | | A | AXX | 10 | 2 | 2 | 3 |
| 4330 | | PALE | 10 | 01 | 2150 | N13 | E30 | 10 | 4.2 | | A | AXX | 10 | 2 | 1 | 3 |
| 4330 | | LEAR | 10 | 02 | 0025 | N12 | E28 | 10 | 4.1 | | B | BXO | 10 | 4 | 3 | 5 |
| 4330 | | RAMY | 10 | 02 | 1300 | N13 | E22 | 10 | 4.2 | | B | BXO | 10 | 8 | 5 | 3 |
| 4330 | 23850 | MWIL | 10 | 02 | 1445 | N13 | E21 | 10 | 4.2 | 3 | ( B) | | | | | |
| 4330 | | PALE | 10 | 02 | 2030 | N12 | E17 | 10 | 4.1 | | B | BXO | 20 | 4 | 5 | 3 |
| 4330 | | LEAR | 10 | 03 | 0014 | N13 | E14 | 10 | 4.1 | | B | BXO | 30 | 6 | 6 | 3 |
| 4330 | | MANI | 10 | 03 | 0150 | N13 | E14 | 10 | 4.1 | | | BXO | 20 | 7 | 6 | 3 |
| 4330 | | ATHN | 10 | 03 | 0800 | N12 | E09 | 10 | 4.0 | | B | CSO | 20 | 2 | 3 | 1 |
| 4330 | | RAMY | 10 | 03 | 1255 | N13 | E08 | 10 | 4.1 | | B | DAO | 40 | 9 | 6 | 3 |
| 4330 | | BOUL | 10 | 03 | 1343 | N12 | E07 | 10 | 4.1 | | B | BXO | 20 | 5 | 6 | 2 |
| 4330 | 23850 | MWIL | 10 | 03 | 1450 | N13 | E07 | 10 | 4.2 | 3 | (BF) | | | | | |
| 4330 | | PALE | 10 | 03 | 1800 | N12 | E05 | 10 | 4.1 | | B | DRO | 30 | 6 | 7 | 3 |
| 4330 | | HOLL | 10 | 03 | 2215 | N13 | E02 | 10 | 4.1 | | B | DSO | 40 | 7 | 8 | 3 |
| 4330 | | LEAR | 10 | 04 | 0020 | N13 | E02 | 10 | 4.2 | | B | BXO | 40 | 9 | 7 | 3 |
| 4330 | | ATHN | 10 | 04 | 0700 | N13 | W04 | 10 | 4.0 | | B | CSO | 50 | 4 | 6 | 3 |
| 4330 | | RAMY | 10 | 04 | 1349 | N13 | W06 | 10 | 4.1 | | B | DAO | 30 | 7 | 8 | 4 |
| 4330 | | BOUL | 10 | 04 | 1430 | N12 | W06 | 10 | 4.2 | | B | BXO | 20 | 5 | 7 | 2 |
| 4330 | 23850 | MWIL | 10 | 04 | 1515 | N13 | W07 | 10 | 4.1 | 2 | ( B) | | | | | |
| 4330 | | PALE | 10 | 04 | 1810 | N12 | W09 | 10 | 4.1 | | B | BXO | 30 | 5 | 8 | 2 |
| 4330 | | MANI | 10 | 04 | 2329 | N13 | W12 | 10 | 4.1 | | | BXO | 10 | 4 | 6 | 3 |
| 4330 | | LEAR | 10 | 04 | 2333 | N12 | W11 | 10 | 4.2 | | B | CRO | 10 | 5 | 6 | 3 |
| 4330 | | LEAR | 10 | 05 | 0001 | N12 | W11 | 10 | 4.2 | | B | CRO | 10 | 6 | 6 | 3 |
| 4330 | | RAMY | 10 | 05 | 1326 | N16 | W18 | 10 | 4.2 | | B | BXO | 20 | 4 | 5 | 4 |
| 4330 | | HOLL | 10 | 05 | 1445 | N12 | W17 | 10 | 4.3 | | A | AXX | 10 | 1 | 1 | 3 |
| 4330 | 23850 | MWIL | 10 | 05 | 1500 | N11 | W17 | 10 | 4.3 | 2 | (AP) | | | | | |
| 4330 | | BOUL | 10 | 05 | 1535 | N12 | W18 | 10 | 4.3 | | A | AXX | 10 | 1 | | 3 |
| 4330 | | BOUL | 10 | 06 | 1502 | N13 | W36 | 10 | 3.9 | | A | AXX | 10 | 2 | 2 | 3 |
| 4330 | 23850 | MWIL | 10 | 06 | 1530 | N12 | W37 | 10 | 3.9 | 2 | AP | | | | | |
| 4330 | | HOLL | 10 | 06 | 1546 | N12 | W37 | 10 | 3.9 | | A | AXX | | 1 | 1 | 3 |
| 4330 | | PALE | 10 | 06 | 1750 | N12 | W39 | 10 | 3.8 | | A | AXX | 10 | 2 | 2 | 3 |
| 4336 | | RAMY | 10 | 08 | 1250 | S09 | W44 | 10 | 5.2 | | B | BXO | 10 | 3 | 3 | 4 |
| 4336 | | HOLL | 10 | 08 | 1504 | S09 | W46 | 10 | 5.2 | | A | AXX | 10 | 1 | | 4 |
| 4336 | | LEAR | 10 | 09 | 0145 | S10 | W49 | 10 | 5.4 | | A | AXX | 10 | 1 | 1 | 3 |
| 0001 | 23855 | MWIL | 10 | 06 | 1530 | S04 | W06 | 10 | 6.2 | 2 | X | | | | | |
| 0001 | | RAMY | 10 | 06 | 1615 | S01 | W06 | 10 | 6.2 | | A | AXX | 10 | 1 | 1 | 4 |
| 4332 | | RAMY | 10 | 05 | 1326 | S14 | E29 | 10 | 7.8 | | B | CAO | 20 | 5 | 3 | 4 |
| 4332 | | HOLL | 10 | 05 | 1445 | S14 | E27 | 10 | 7.7 | | B | BXO | 10 | 3 | 3 | 3 |
| 4332 | 23854 | MWIL | 10 | 05 | 1500 | S13 | E26 | 10 | 7.6 | 2 | (AP) | | | | | |
| 4332 | | LEAR | 10 | 05 | 2319 | S16 | E23 | 10 | 7.7 | | A | AXX | | 1 | 1 | 4 |
| 4332 | | LEAR | 10 | 06 | 0001 | S16 | E23 | 10 | 7.7 | | A | AXX | | 1 | 1 | 4 |
| 4332 | | ATHN | 10 | 06 | 0615 | S12 | E21 | 10 | 7.8 | | B | BXO | 30 | 6 | 3 | 3 |
| 4332 | | RAMY | 10 | 06 | 1217 | S13 | E16 | 10 | 7.7 | | B | DAO | 70 | 9 | 4 | 4 |
| 4332 | | BOUL | 10 | 06 | 1502 | S13 | E12 | 10 | 7.5 | | B | DAO | 50 | 6 | 3 | 3 |
| 4332 | 23854 | MWIL | 10 | 06 | 1530 | S14 | E15 | 10 | 7.8 | 4 | B | | | | | |
| 4332 | | HOLL | 10 | 06 | 1546 | S14 | E14 | 10 | 7.7 | | B | BXO | 20 | 6 | 5 | 3 |
| 4332 | | PALE | 10 | 06 | 1750 | S13 | E13 | 10 | 7.7 | | B | BXO | 30 | 5 | 4 | 3 |
| 4332 | | LEAR | 10 | 07 | 0006 | S14 | E10 | 10 | 7.8 | | B | BXO | 20 | 10 | 4 | 3 |
| 4332 | | ATHN | 10 | 07 | 0600 | S15 | E05 | 10 | 7.6 | | B | BXO | 20 | 3 | 3 | 3 |
| 4332 | | RAMY | 10 | 07 | 1210 | S16 | E02 | 10 | 7.7 | | B | DAO | 40 | 2 | 3 | 3 |
| 4332 | | BOUL | 10 | 07 | 1501 | S12 | W01 | 10 | 7.6 | | B | BXO | 10 | 2 | 3 | 3 |
| 4332 | | HOLL | 10 | 07 | 1530 | S15 | W00 | 10 | 7.6 | | B | BXO | 10 | 2 | 3 | 3 |
| 4332 | | PALE | 10 | 07 | 1810 | S15 | W02 | 10 | 7.6 | | B | BXO | 10 | 2 | 4 | 3 |
| 4332 | | LEAR | 10 | 08 | 0045 | S15 | W05 | 10 | 7.7 | | B | BXO | 20 | 4 | 5 | 2 |
| 4332 | | RAMY | 10 | 08 | 1250 | S14 | W13 | 10 | 7.6 | | B | CRO | 20 | 12 | 7 | 4 |
| 4332 | 23854 | MWIL | 10 | 08 | 1445 | S15 | W11 | 10 | 7.8 | 2 | B | | | | | |
| 4332 | | HOLL | 10 | 08 | 1504 | S14 | W13 | 10 | 7.6 | | B | BXO | 30 | 7 | 6 | 4 |
| 4332 | | PALE | 10 | 08 | 1833 | S14 | W15 | 10 | 7.6 | | B | BXO | 20 | 4 | 4 | 2 |
| 4332 | | LEAR | 10 | 09 | 0145 | S13 | W17 | 10 | 7.8 | | B | BXO | 10 | 2 | 3 | 3 |
| 4332 | | HOLL | 10 | 09 | 1448 | S15 | W28 | 10 | 7.5 | | A | AXX | | 1 | 1 | 4 |
| 4332 | | LEAR | 10 | 10 | 0000 | S14 | W32 | 10 | 7.6 | | B | BXO | 10 | 3 | 3 | 2 |
| 4332 | | ATHN | 10 | 10 | 0610 | S15 | W38 | 10 | 7.4 | | B | CSO | 60 | 2 | 4 | 3 |
| 4332 | | RAMY | 10 | 10 | 1313 | S15 | W40 | 10 | 7.5 | | B | DAO | 80 | 6 | 3 | 1 |
| 4332 | | BOUL | 10 | 10 | 1431 | S13 | W40 | 10 | 7.6 | | B | CRO | 50 | 8 | 3 | 2 |
| 4332 | 23860 | MWIL | 10 | 10 | 1515 | S15 | W40 | 10 | 7.6 | 3 | ( B) | | | | | |
| 4332 | | HOLL | 10 | 10 | 1550 | S15 | W40 | 10 | 7.6 | | B | DSO | 110 | 10 | 5 | 3 |

# REGIONS OF SUNSPOT ACTIVITY
## (ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4332 | | PALE | 10 | 10 | 1845 | S15 | W42 | 10 | 7.6 | | B | BXO | 40 | 8 | 5 | 3 |
| 4332 | | LEAR | 10 | 11 | 0205 | S16 | W47 | 10 | 7.5 | | B | DAO | 120 | 6 | 4 | 3 |
| 4332 | | ATHN | 10 | 11 | 0600 | S15 | W55 | 10 | 7.1 | | B | DAO | 160 | 5 | 7 | 3 |
| 4332 | | RAMY | 10 | 11 | 1220 | S15 | W53 | 10 | 7.5 | | B | DAO | 90 | 6 | 7 | 4 |
| 4332 | | HOLL | 10 | 11 | 1540 | S15 | W54 | 10 | 7.6 | | B | DSO | 150 | 14 | 5 | 2 |
| 4332 | 23860 | MWIL | 10 | 11 | 1600 | S15 | W54 | 10 | 7.6 | 4 | ( B) | | | | | |
| 4332 | | PALE | 10 | 11 | 1800 | S16 | W57 | 10 | 7.4 | | B | DSO | 120 | 12 | 8 | 4 |
| 4332 | | LEAR | 10 | 12 | 0018 | S14 | W60 | 10 | 7.5 | | B | DSO | 160 | 12 | 9 | 4 |
| 4332 | | ATHN | 10 | 12 | 0630 | S12 | W61 | 10 | 7.7 | | B | DAO | 110 | 6 | 8 | 3 |
| 4332 | | RAMY | 10 | 12 | 1210 | S15 | W68 | 10 | 7.4 | | B | DAO | 230 | 11 | 9 | 4 |
| 4332 | | BOUL | 10 | 12 | 1408 | S14 | W68 | 10 | 7.4 | | B | CSO | 80 | 9 | 8 | 3 |
| 4332 | 23860 | MWIL | 10 | 12 | 1530 | S15 | W67 | 10 | 7.6 | 3 | ( B) | | | | | |
| 4332 | | HOLL | 10 | 12 | 1539 | S14 | W67 | 10 | 7.6 | | B | DAO | 70 | 6 | 8 | 2 |
| 4332 | | PALE | 10 | 12 | 1800 | S15 | W69 | 10 | 7.5 | | B | DAO | 90 | 7 | 10 | 3 |
| 4332 | | LEAR | 10 | 13 | 0030 | S16 | W70 | 10 | 7.7 | | B | CSO | 210 | 12 | 9 | 3 |
| 4332 | | RAMY | 10 | 13 | 1205 | S15 | W80 | 10 | 7.4 | | B | CAO | 60 | 4 | 6 | 4 |
| 4332 | | HOLL | 10 | 13 | 1412 | S15 | W79 | 10 | 7.6 | | B | BXO | | 3 | 3 | 2 |
| 4332 | 23860 | MWIL | 10 | 13 | 1530 | S15 | W80 | 10 | 7.6 | 2 | AP | | | | | |
| 4329 | | HOLL | 10 | 01 | 2008 | N20 | E87 | 10 | 8.5 | | B | CSO | 60 | 4 | 8 | 3 |
| 4329 | | PALE | 10 | 01 | 2150 | N19 | E83 | 10 | 8.2 | | B | CHO | 80 | 2 | 6 | 3 |
| 4329 | | LEAR | 10 | 02 | 0025 | N18 | E79 | 10 | 8.0 | | B | DSO | 80 | 2 | 5 | 5 |
| 4329 | | ATHN | 10 | 02 | 0615 | N20 | E79 | 10 | 8.3 | | B | BXO | 60 | 2 | 5 | 2 |
| 4329 | | RAMY | 10 | 02 | 1300 | N20 | E76 | 10 | 8.4 | | B | DAO | 150 | 5 | 6 | 3 |
| 4329 | | BOUL | 10 | 02 | 1400 | N18 | E70 | 10 | 7.9 | | B | CSO | 50 | 2 | 3 | 2 |
| 4329 | 23851 | MWIL | 10 | 02 | 1445 | N21 | E75 | 10 | 8.4 | 4 | ( B) | | | | | |
| 4329 | | PALE | 10 | 02 | 2030 | N19 | E72 | 10 | 8.3 | | B | CSO | 30 | 2 | 5 | 3 |
| 4329 | | LEAR | 10 | 03 | 0014 | N22 | E69 | 10 | 8.3 | | B | CHO | 90 | 2 | 2 | 3 |
| 4329 | | MANI | 10 | 03 | 0150 | N21 | E70 | 10 | 8.4 | | | CSO | 100 | 2 | 4 | 3 |
| 4329 | | ATHN | 10 | 03 | 0800 | N19 | E65 | 10 | 8.3 | | B | CSO | 110 | 2 | 4 | 1 |
| 4329 | | RAMY | 10 | 03 | 1255 | N19 | E63 | 10 | 8.3 | | B | DAO | 110 | 8 | 5 | 3 |
| 4329 | | BOUL | 10 | 03 | 1343 | N19 | E63 | 10 | 8.4 | | A | AXX | 40 | 3 | 3 | 2 |
| 4329 | 23851 | MWIL | 10 | 03 | 1450 | N20 | E62 | 10 | 8.4 | 4 | ( B) | | | | | |
| 4329 | | PALE | 10 | 03 | 1800 | N20 | E60 | 10 | 8.3 | | B | CSO | 50 | 4 | 5 | 3 |
| 4329 | | HOLL | 10 | 03 | 2215 | N19 | E56 | 10 | 8.2 | | B | CAO | 40 | 3 | 6 | 3 |
| 4329 | | LEAR | 10 | 04 | 0020 | N19 | E56 | 10 | 8.3 | | B | CAO | 40 | 6 | 5 | 3 |
| 4329 | | ATHN | 10 | 04 | 0700 | N19 | E52 | 10 | 8.3 | | B | CSO | 70 | 3 | 4 | 3 |
| 4329 | | RAMY | 10 | 04 | 1349 | N19 | E51 | 10 | 8.5 | | B | CAO | 50 | 5 | 6 | 4 |
| 4329 | | BOUL | 10 | 04 | 1430 | N20 | E50 | 10 | 8.4 | | B | CRO | 50 | 5 | 7 | 2 |
| 4329 | 23851 | MWIL | 10 | 04 | 1515 | N20 | E48 | 10 | 8.3 | 3 | (BF) | | | | | |
| 4329 | | PALE | 10 | 04 | 1810 | N20 | E47 | 10 | 8.4 | | B | CSO | 40 | 3 | 6 | 2 |
| 4329 | | MANI | 10 | 04 | 2329 | N20 | E46 | 10 | 8.5 | | | HSX | 60 | 2 | 2 | 3 |
| 4329 | | LEAR | 10 | 04 | 2333 | N20 | E45 | 10 | 8.4 | | A | HSX | 50 | 2 | 2 | 3 |
| 4329 | | LEAR | 10 | 05 | 0001 | N20 | E45 | 10 | 8.4 | | A | HSX | 50 | 2 | 2 | 3 |
| 4329 | | ATHN | 10 | 05 | 0730 | N19 | E39 | 10 | 8.3 | | B | CSO | 40 | 2 | 5 | 2 |
| 4329 | | RAMY | 10 | 05 | 1326 | N19 | E38 | 10 | 8.5 | | B | CAO | 50 | 6 | 4 | 4 |
| 4329 | | HOLL | 10 | 05 | 1445 | N21 | E37 | 10 | 8.5 | | B | CAI | 50 | 3 | 2 | 3 |
| 4329 | 23851 | MWIL | 10 | 05 | 1500 | N20 | E36 | 10 | 8.4 | 2 | AF | | | | | |
| 4329 | | BOUL | 10 | 05 | 1535 | N21 | E34 | 10 | 8.3 | | B | CRO | 60 | 4 | 8 | 3 |
| 4329 | | LEAR | 10 | 06 | 0001 | N19 | E32 | 10 | 8.4 | | A | HSX | 40 | 2 | 1 | 4 |
| 4329 | | ATHN | 10 | 06 | 0615 | N20 | E31 | 10 | 8.6 | | B | CSO | 30 | 4 | 3 | 3 |
| 4329 | | RAMY | 10 | 06 | 1217 | N20 | E25 | 10 | 8.4 | | B | DAO | 40 | 3 | 2 | 4 |
| 4329 | 23851 | MWIL | 10 | 06 | 1530 | N19 | E23 | 10 | 8.4 | 4 | AF | | | | | |
| 4329 | | HOLL | 10 | 06 | 1546 | N19 | E23 | 10 | 8.4 | | A | AXX | 10 | 3 | 2 | 3 |
| 4329 | | PALE | 10 | 06 | 1750 | N21 | E21 | 10 | 8.4 | | A | AXX | 10 | 3 | 2 | 3 |
| 4329 | | LEAR | 10 | 07 | 0006 | N21 | E17 | 10 | 8.3 | | A | AXX | 10 | 3 | 2 | 3 |
| 4329 | | ATHN | 10 | 07 | 0600 | N19 | E15 | 10 | 8.4 | | A | AXO | 10 | 2 | 1 | 3 |
| 4329 | | RAMY | 10 | 07 | 1210 | N18 | E11 | 10 | 8.3 | | A | AXX | 10 | 2 | 1 | 3 |
| 4329 | | BOUL | 10 | 07 | 1501 | N20 | E08 | 10 | 8.2 | | B | BXO | 10 | 3 | 3 | 3 |
| 4329 | | HOLL | 10 | 07 | 1530 | N19 | E09 | 10 | 8.3 | | A | AXX | 10 | 2 | 2 | 3 |
| 4329 | | PALE | 10 | 07 | 1810 | N19 | E08 | 10 | 8.4 | | A | AXX | 10 | 2 | 1 | 3 |
| 4329 | | LEAR | 10 | 08 | 0045 | N18 | E02 | 10 | 8.2 | | A | AXX | 10 | 1 | 1 | 2 |
| 4334 | | HOLL | 10 | 07 | 1530 | S04 | E09 | 10 | 8.3 | | A | AXX | 10 | 2 | 1 | 3 |
| 4334 | | PALE | 10 | 07 | 1810 | S04 | E07 | 10 | 8.3 | | A | AXX | 10 | 2 | 1 | 3 |
| 4334 | | LEAR | 10 | 08 | 0045 | S04 | E04 | 10 | 8.3 | | B | BXO | 10 | 2 | 3 | 2 |
| 4334 | | RAMY | 10 | 08 | 1250 | S04 | W04 | 10 | 8.2 | | A | AXX | 10 | 3 | 1 | 4 |
| 4334 | | HOLL | 10 | 08 | 1504 | S04 | W05 | 10 | 8.3 | | A | AXX | 10 | 2 | 1 | 4 |
| 4334 | | LEAR | 10 | 09 | 0145 | S04 | W11 | 10 | 8.3 | | A | AXX | 10 | 1 | 1 | 3 |
| 4328 | | HOLL | 10 | 01 | 2008 | N06 | E85 | 10 | 8.2 | | A | HHX | 360 | 1 | 4 | 3 |

# REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4328 | | PALE | 10 | 01 | 2150 | N05 | E86 | 10 | 8.3 | | A | HSX | 10 | 1 | 2 | 3 |
| 4328 | | LEAR | 10 | 02 | 0025 | N05 | E82 | 10 | 8.2 | | B | DKO | 80 | 3 | 10 | 5 |
| 4328 | | ATHN | 10 | 02 | 0615 | N07 | E80 | 10 | 8.3 | | A | HSX | 240 | 1 | 2 | 2 |
| 4328 | | RAMY | 10 | 02 | 1300 | N06 | E77 | 10 | 8.3 | | B | DKO | 410 | 9 | 7 | 3 |
| 4328 | 23852 | MWIL | 10 | 02 | 1445 | N08 | E80 | 10 | 8.6 | 4 | ( B) | | | | | |
| 4328 | | PALE | 10 | 02 | 2030 | N07 | E79 | 10 | 8.8 | | B | FKO | 500 | 7 | 17 | 3 |
| 4328 | | LEAR | 10 | 03 | 0014 | N10 | E75 | 10 | 8.6 | | B | EHO | 840 | 11 | 12 | 3 |
| 4328 | | MANI | 10 | 03 | 0150 | N07 | E74 | 10 | 8.6 | | | EHO | 1970 | 8 | 17 | 3 |
| 4328 | | ATHN | 10 | 03 | 0800 | N06 | E66 | 10 | 8.3 | | B | EHO | 590 | 4 | 11 | 1 |
| 4328 | | RAMY | 10 | 03 | 1255 | N08 | E69 | 10 | 8.7 | | B | FKO | 1000 | 26 | 16 | 3 |
| 4328 | | BOUL | 10 | 03 | 1343 | N07 | E68 | 10 | 8.7 | | B | EHI | 380 | 15 | 15 | 2 |
| 4328 | 23852 | MWIL | 10 | 03 | 1450 | N07 | E68 | 10 | 8.7 | 5 | (BY) | | | | | |
| 4328 | | PALE | 10 | 03 | 1800 | N07 | E67 | 10 | 8.8 | | B | FKO | 700 | 23 | 16 | 3 |
| 4328 | | HOLL | 10 | 03 | 2215 | N06 | E65 | 10 | 8.8 | | BG | EKI | 970 | 19 | 14 | 3 |
| 4328 | | LEAR | 10 | 04 | 0020 | N06 | E62 | 10 | 8.7 | | BG | EHI | 920 | 24 | 14 | 3 |
| 4328 | | ATHN | 10 | 04 | 0700 | N07 | E57 | 10 | 8.6 | | B | EKO | 890 | 10 | 15 | 3 |
| 4328 | | RAMY | 10 | 04 | 1349 | N07 | E57 | 10 | 8.8 | | BG | FKO | 1040 | 26 | 16 | 4 |
| 4328 | | BOUL | 10 | 04 | 1430 | N07 | E55 | 10 | 8.7 | | B | EAI | 910 | 38 | 15 | 2 |
| 4328 | 23852 | MWIL | 10 | 04 | 1515 | N07 | E55 | 10 | 8.8 | 5 | ( B) | | | | | |
| 4328 | | PALE | 10 | 04 | 1810 | N07 | E53 | 10 | 8.7 | | B | FKO | 940 | 28 | 14 | 2 |
| 4328 | | MANI | 10 | 04 | 2329 | N07 | E49 | 10 | 8.6 | | | FKO | 920 | 28 | 16 | 3 |
| 4328 | | LEAR | 10 | 04 | 2333 | N07 | E48 | 10 | 8.6 | | BG | FKO | 830 | 35 | 16 | 3 |
| 4328 | | LEAR | 10 | 05 | 0001 | N07 | E48 | 10 | 8.6 | | BG | FKO | 830 | 35 | 16 | 3 |
| 4328 | | ATHN | 10 | 05 | 0730 | N07 | E46 | 10 | 8.8 | | B | EKO | 910 | 14 | 14 | 2 |
| 4328 | | ATHN | 10 | 05 | 0730 | N07 | E56 | 10 | 9.5 | | B | EKO | 910 | 14 | 14 | 2 |
| 4328 | | RAMY | 10 | 05 | 1326 | N08 | E42 | 10 | 8.7 | | BG | FKO | 860 | 31 | 16 | 4 |
| 4328 | | HOLL | 10 | 05 | 1445 | N08 | E42 | 10 | 8.8 | | BG | EKI | 850 | 30 | 14 | 3 |
| 4328 | 23852 | MWIL | 10 | 05 | 1500 | N07 | E40 | 10 | 8.6 | 5 | ( B) | | | | | |
| 4328 | | BOUL | 10 | 05 | 1535 | N08 | E40 | 10 | 8.6 | | B | EAI | 810 | 39 | 14 | 3 |
| 4328 | | LEAR | 10 | 05 | 2319 | N05 | E35 | 10 | 8.6 | | BG | FKO | 720 | 52 | 16 | 4 |
| 4328 | | LEAR | 10 | 05 | 2333 | N07 | E48 | 10 | 9.6 | | BG | FKO | 830 | 35 | 16 | 3 |
| 4328 | | LEAR | 10 | 06 | 0001 | N05 | E35 | 10 | 8.6 | | BG | FKO | 720 | 52 | 16 | 4 |
| 4328 | | ATHN | 10 | 06 | 0615 | N08 | E33 | 10 | 8.7 | | BG | EKO | 650 | 28 | 14 | 3 |
| 4328 | | RAMY | 10 | 06 | 1217 | N07 | E29 | 10 | 8.7 | | BG | EKO | 680 | 37 | 15 | 4 |
| 4328 | | BOUL | 10 | 06 | 1502 | N08 | E25 | 10 | 8.5 | | BG | EKO | 750 | 32 | 14 | 3 |
| 4328 | 23852 | MWIL | 10 | 06 | 1530 | N07 | E27 | 10 | 8.7 | 5 | B | | | | | |
| 4328 | | HOLL | 10 | 06 | 1546 | N07 | E27 | 10 | 8.7 | | BG | EKI | 660 | 31 | 15 | 3 |
| 4328 | | PALE | 10 | 06 | 1750 | N08 | E26 | 10 | 8.7 | | BG | EKO | 710 | 25 | 14 | 3 |
| 4328 | | LEAR | 10 | 07 | 0006 | N08 | E22 | 10 | 8.7 | | BG | EHO | 730 | 37 | 14 | 3 |
| 4328 | | ATHN | 10 | 07 | 0600 | N07 | E18 | 10 | 8.6 | | BG | FKO | 690 | 25 | 16 | 3 |
| 4328 | | RAMY | 10 | 07 | 1210 | N06 | E16 | 10 | 8.7 | | B | EKO | 700 | 30 | 15 | 3 |
| 4328 | | BOUL | 10 | 07 | 1501 | N09 | E13 | 10 | 8.6 | | B | EKO | 660 | 35 | 15 | 3 |
| 4328 | | HOLL | 10 | 07 | 1530 | N07 | E14 | 10 | 8.7 | | BG | FKI | 760 | 38 | 16 | 3 |
| 4328 | | PALE | 10 | 07 | 1810 | N07 | E12 | 10 | 8.7 | | BG | FKI | 650 | 48 | 16 | 3 |
| 4328 | | LEAR | 10 | 08 | 0045 | N07 | E09 | 10 | 8.7 | | BG | FKO | 780 | 50 | 16 | 2 |
| 4328 | | ATHN | 10 | 08 | 0700 | N08 | E06 | 10 | 8.7 | | BG | FKI | 580 | 33 | 17 | 2 |
| 4328 | | RAMY | 10 | 08 | 1250 | N08 | E03 | 10 | 8.8 | | BG | FKI | 810 | 85 | 17 | 4 |
| 4328 | 23852 | MWIL | 10 | 08 | 1445 | N07 | E01 | 10 | 8.7 | 5 | ( B) | | | | | |
| 4328 | | HOLL | 10 | 08 | 1504 | N08 | E01 | 10 | 8.7 | | BG | FHI | 770 | 63 | 17 | 4 |
| 4328 | | PALE | 10 | 08 | 1833 | N08 | W01 | 10 | 8.7 | | BG | FKI | 710 | 45 | 16 | 2 |
| 4328 | | LEAR | 10 | 09 | 0145 | N07 | W05 | 10 | 8.7 | | BG | FKO | 670 | 55 | 18 | 3 |
| 4328 | | ATHN | 10 | 09 | 1100 | N08 | W11 | 10 | 8.6 | | BG | FKI | 620 | 30 | 17 | 2 |
| 4328 | | HOLL | 10 | 09 | 1448 | N07 | W12 | 10 | 8.7 | | BG | FHI | 670 | 49 | 17 | 4 |
| 4328 | 23852 | MWIL | 10 | 09 | 1500 | N07 | W12 | 10 | 8.7 | 5 | (BY) | | | | | |
| 4328 | | BOUL | 10 | 09 | 1520 | N05 | W12 | 10 | 8.7 | | BG | EKO | 600 | 28 | 14 | 2 |
| 4328 | | RAMY | 10 | 09 | 1644 | N07 | W13 | 10 | 8.7 | | BG | FKO | 440 | 37 | 16 | 2 |
| 4328 | | PALE | 10 | 09 | 1800 | N08 | W14 | 10 | 8.7 | | BG | FKI | 560 | 51 | 16 | 3 |
| 4328 | | LEAR | 10 | 10 | 0000 | N07 | W17 | 10 | 8.7 | | BG | FKO | 500 | 38 | 16 | 2 |
| 4328 | | ATHN | 10 | 10 | 0610 | N07 | W20 | 10 | 8.8 | | BG | FKI | 620 | 33 | 18 | 3 |
| 4328 | | RAMY | 10 | 10 | 1313 | N07 | W24 | 10 | 8.8 | | B | FKO | 490 | 14 | 16 | 1 |
| 4328 | | BOUL | 10 | 10 | 1431 | N08 | W25 | 10 | 8.7 | | BG | FKO | 370 | 20 | 16 | 2 |
| 4328 | 23852 | MWIL | 10 | 10 | 1515 | N06 | W26 | 10 | 8.7 | 4 | (BY) | | | | | |
| 4328 | | HOLL | 10 | 10 | 1550 | N07 | W26 | 10 | 8.7 | | BGD | EHO | 630 | 24 | 15 | 3 |
| 4328 | | PALE | 10 | 10 | 1845 | N08 | W28 | 10 | 8.7 | | BGD | FKO | 500 | 33 | 16 | 3 |
| 4328 | | LEAR | 10 | 11 | 0205 | N07 | W33 | 10 | 8.6 | | B | EHO | 380 | 17 | 15 | 3 |
| 4328 | | ATHN | 10 | 11 | 0600 | N09 | W32 | 10 | 8.8 | | BG | FHO | 430 | 12 | 17 | 3 |
| 4328 | | RAMY | 10 | 11 | 1220 | N07 | W37 | 10 | 8.7 | | B | FAO | 220 | 12 | 16 | 4 |
| 4328 | | HOLL | 10 | 11 | 1540 | N07 | W40 | 10 | 8.7 | | B | FHO | 570 | 23 | 16 | 2 |
| 4328 | 23852 | MWIL | 10 | 11 | 1600 | N06 | W39 | 10 | 8.7 | 5 | ( B) | | | | | |
| 4328 | | PALE | 10 | 11 | 1800 | N08 | W41 | 10 | 8.7 | | B | FHO | 300 | 20 | 16 | 4 |
| 4328 | | LEAR | 10 | 12 | 0018 | N07 | W45 | 10 | 8.6 | | B | ESO | 290 | 13 | 15 | 4 |

# REGIONS OF SUNSPOT ACTIVITY
## (ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hem) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4328 | | ATHN | 10 | 12 | 0630 | N08 | W47 | 10 | 8.7 | | B | FHO | 330 | 12 | 16 | 3 |
| 4328 | | RAMY | 10 | 12 | 1210 | N07 | W51 | 10 | 8.7 | | B | FAO | 340 | 19 | 17 | 4 |
| 4328 | | BOUL | 10 | 12 | 1408 | N10 | W54 | 10 | 8.5 | | B | EKO | 320 | 13 | 18 | 3 |
| 4328 | 23852 | MWIL | 10 | 12 | 1530 | N06 | W52 | 10 | 8.8 | 4 | ( B) | | | | | |
| 4328 | | HOLL | 10 | 12 | 1539 | N07 | W53 | 10 | 8.7 | | B | FHO | 330 | 11 | 17 | 2 |
| 4328 | | PALE | 10 | 12 | 1800 | N08 | W54 | 10 | 8.7 | | B | FKO | 300 | 10 | 16 | 3 |
| 4328 | | LEAR | 10 | 13 | 0030 | N05 | W58 | 10 | 8.7 | | B | EHO | 440 | 7 | 13 | 3 |
| 4328 | | ATHN | 10 | 13 | 0630 | N08 | W61 | 10 | 8.7 | | B | FHO | 300 | 4 | 16 | 2 |
| 4328 | | RAMY | 10 | 13 | 1205 | N06 | W64 | 10 | 8.7 | | B | EAO | 380 | 7 | 14 | 4 |
| 4328 | | HOLL | 10 | 13 | 1412 | N06 | W65 | 10 | 8.7 | | B | FSO | 350 | 6 | 16 | 2 |
| 4328 | 23852 | MWIL | 10 | 13 | 1530 | N06 | W66 | 10 | 8.7 | 4 | ( B) | | | | | |
| 4328 | | BOUL | 10 | 13 | 1600 | N06 | W67 | 10 | 8.7 | | B | FSO | 220 | 3 | 16 | 2 |
| 4328 | | PALE | 10 | 13 | 1905 | N07 | W71 | 10 | 8.5 | | B | FSO | 210 | 5 | 17 | 3 |
| 4328 | | LEAR | 10 | 14 | 0035 | N04 | W70 | 10 | 8.8 | | B | FKO | 420 | 7 | 16 | 3 |
| 4328 | | ATHN | 10 | 14 | 0622 | N07 | W74 | 10 | 8.7 | | B | DAO | 210 | 3 | 8 | 3 |
| 4328 | | RAMY | 10 | 14 | 1300 | N06 | W79 | 10 | 8.6 | | B | FAO | 220 | 5 | 16 | 3 |
| 4328 | | HOLL | 10 | 14 | 1456 | N08 | W72 | 10 | 9.2 | | B | CSO | 120 | 2 | 3 | 2 |
| 4328 | | BOUL | 10 | 14 | 1503 | N07 | W74 | 10 | 9.1 | | B | BXO | 50 | 4 | 4 | 2 |
| 4328 | 23852 | MWIL | 10 | 14 | 1530 | N06 | W77 | 10 | 8.9 | 4 | B | | | | | |
| 4328 | | PALE | 10 | 14 | 1835 | N08 | W85 | 10 | 8.4 | | B | CSO | 130 | 3 | 3 | 3 |
| 4328 | | LEAR | 10 | 15 | 0134 | N08 | W79 | 10 | 9.1 | | B | CAO | 80 | 3 | 4 | 2 |
| 4328 | | ATHN | 10 | 15 | 0600 | N05 | W82 | 10 | 9.1 | | A | HKX | 150 | 1 | 3 | 3 |
| 4328 | | HOLL | 10 | 15 | 1457 | N08 | W86 | 10 | 9.2 | | A | HSX | 100 | 1 | 2 | 4 |
| 4328 | 23852 | MWIL | 10 | 15 | 1500 | N06 | W87 | 10 | 9.1 | 2 | AF | | | | | |
| 4338 | | LEAR | 10 | 09 | 0145 | S16 | E08 | 10 | 9.7 | | B | BXO | 10 | 3 | 3 | 3 |
| 4338 | | HOLL | 10 | 09 | 1448 | S16 | E02 | 10 | 9.8 | | A | AXX | 10 | 2 | 2 | 4 |
| 4338 | 23859 | MWIL | 10 | 09 | 1500 | S16 | E02 | 10 | 9.8 | 2 | ( B) | | | | | |
| 4338 | | PALE | 10 | 09 | 1800 | S15 | W01 | 10 | 9.7 | | B | BXO | 20 | 3 | 3 | 3 |
| 4338 | | LEAR | 10 | 10 | 0000 | S15 | W04 | 10 | 9.7 | | B | BXO | 10 | 5 | 3 | 2 |
| 4338 | | ATHN | 10 | 10 | 0610 | S15 | W07 | 10 | 9.7 | | B | DSO | 50 | 7 | 5 | 3 |
| 4338 | | RAMY | 10 | 10 | 1313 | S16 | W12 | 10 | 9.6 | | B | DAO | 80 | 7 | 6 | 1 |
| 4338 | | BOUL | 10 | 10 | 1431 | S13 | W12 | 10 | 9.7 | | B | BXO | 30 | 8 | 5 | 2 |
| 4338 | 23859 | MWIL | 10 | 10 | 1515 | S16 | W14 | 10 | 9.6 | 3 | ( B) | | | | | |
| 4338 | | HOLL | 10 | 10 | 1550 | S17 | W13 | 10 | 9.7 | | B | CRO | 40 | 4 | 5 | 3 |
| 4338 | | PALE | 10 | 10 | 1845 | S16 | W16 | 10 | 9.6 | | B | DRO | 50 | 9 | 6 | 3 |
| 4338 | | LEAR | 10 | 11 | 0205 | S15 | W20 | 10 | 9.6 | | B | DAO | 160 | 13 | 6 | 3 |
| 4338 | | ATHN | 10 | 11 | 0600 | S14 | W22 | 10 | 9.6 | | B | DKO | 210 | 9 | 7 | 3 |
| 4338 | | RAMY | 10 | 11 | 1220 | S15 | W26 | 10 | 9.5 | | B | DAO | 90 | 8 | 7 | 4 |
| 4338 | | HOLL | 10 | 11 | 1540 | S16 | W27 | 10 | 9.6 | | B | BXO | 90 | 11 | 6 | 2 |
| 4338 | 23859 | MWIL | 10 | 11 | 1600 | S16 | W27 | 10 | 9.6 | 4 | ( B) | | | | | |
| 4338 | | PALE | 10 | 11 | 1800 | S16 | W29 | 10 | 9.6 | | B | CSO | 60 | 11 | 6 | 4 |
| 4338 | | LEAR | 10 | 12 | 0018 | S15 | W33 | 10 | 9.5 | | B | CSO | 80 | 17 | 7 | 4 |
| 4338 | | ATHN | 10 | 12 | 0630 | S13 | W35 | 10 | 9.6 | | B | CAO | 70 | 6 | 8 | 3 |
| 4338 | | RAMY | 10 | 12 | 1210 | S15 | W39 | 10 | 9.6 | | B | CAO | 60 | 11 | 6 | 4 |
| 4338 | | BOUL | 10 | 12 | 1408 | S13 | W41 | 10 | 9.5 | | B | BXO | 20 | 5 | 6 | 3 |
| 4338 | 23859 | MWIL | 10 | 12 | 1530 | S16 | W39 | 10 | 9.7 | 2 | ( B) | | | | | |
| 4338 | | HOLL | 10 | 12 | 1539 | S15 | W42 | 10 | 9.5 | | A | CAO | 30 | 7 | 7 | 2 |
| 4338 | | PALE | 10 | 12 | 1800 | S15 | W43 | 10 | 9.5 | | B | CRO | 50 | 4 | 8 | 3 |
| 4338 | | RAMY | 10 | 13 | 1205 | S15 | W49 | 10 | 9.8 | | A | AXX | 10 | 1 | 1 | 4 |
| 4338 | 23859 | MWIL | 10 | 13 | 1530 | S16 | W50 | 10 | 9.9 | 2 | (AF) | | | | | |
| 4331 | | PALE | 10 | 03 | 1800 | N13 | E85 | 10 | 10.2 | | A | HSX | 140 | 1 | 2 | 3 |
| 4331 | | HOLL | 10 | 03 | 2215 | N13 | E81 | 10 | 10.0 | | A | HSX | 140 | 1 | 2 | 3 |
| 4331 | | LEAR | 10 | 04 | 0020 | N13 | E79 | 10 | 10.0 | | A | HSX | 210 | 2 | 2 | 3 |
| 4331 | | ATHN | 10 | 04 | 0700 | N13 | E77 | 10 | 10.1 | | A | HKO | 150 | 2 | 3 | 3 |
| 4331 | | RAMY | 10 | 04 | 1349 | N13 | E77 | 10 | 10.4 | | B | DAO | 160 | 2 | 3 | 4 |
| 4331 | | BOUL | 10 | 04 | 1430 | N13 | E78 | 10 | 10.5 | | A | HAX | 180 | 4 | 4 | 2 |
| 4331 | 23853 | MWIL | 10 | 04 | 1515 | N15 | E74 | 10 | 10.2 | 3 | (AP) | | | | | |
| 4331 | | PALE | 10 | 04 | 1810 | N13 | E72 | 10 | 10.2 | | A | HSX | 120 | 2 | 2 | 2 |
| 4331 | | MANI | 10 | 04 | 2329 | N13 | E70 | 10 | 10.3 | | | HSX | 140 | 2 | 3 | 3 |
| 4331 | | LEAR | 10 | 04 | 2333 | N13 | E69 | 10 | 10.2 | | A | HSX | 300 | 2 | 3 | 3 |
| 4331 | | LEAR | 10 | 05 | 0001 | N13 | E69 | 10 | 10.2 | | A | HSX | 300 | 2 | 3 | 3 |
| 4331 | | ATHN | 10 | 05 | 0730 | N12 | E65 | 10 | 10.2 | | B | HKO | 130 | 2 | 3 | 2 |
| 4331 | | RAMY | 10 | 05 | 1326 | N14 | E63 | 10 | 10.3 | | A | HKX | 190 | 2 | 3 | 4 |
| 4331 | | HOLL | 10 | 05 | 1445 | N15 | E61 | 10 | 10.2 | | A | HKX | 220 | 22 | 3 | 3 |
| 4331 | 23853 | MWIL | 10 | 05 | 1500 | N14 | E59 | 10 | 10.1 | 4 | (AP) | | | | | |
| 4331 | | BOUL | 10 | 05 | 1535 | N14 | E59 | 10 | 10.1 | | A | HAX | 130 | 9 | 3 | 3 |
| 4331 | | LEAR | 10 | 06 | 0001 | N13 | E55 | 10 | 10.2 | | B | DSO | 250 | 4 | 2 | 4 |
| 4331 | | ATHN | 10 | 06 | 0615 | N12 | E54 | 10 | 10.3 | | A | CAO | 120 | 5 | 3 | 3 |
| 4331 | | ATHN | 10 | 06 | 0615 | N12 | E54 | 10 | 10.3 | | B | CAO | 120 | 5 | 3 | 3 |

# REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4331 | | RAMY | 10 | 06 | 1217 | N14 | E49 | 10 | 10.2 | | A | HKX | 180 | 3 | 3 | 4 |
| 4331 | | BOUL | 10 | 06 | 1502 | N14 | E45 | 10 | 10.0 | | B | DSC | 140 | 2 | 2 | 3 |
| 4331 | 23853 | MWIL | 10 | 06 | 1530 | N14 | E46 | 10 | 10.1 | 5 | AP | | | | | |
| 4331 | | HOLL | 10 | 06 | 1546 | N13 | E47 | 10 | 10.2 | | A | HHX | 140 | 3 | 3 | 3 |
| 4331 | | PALE | 10 | 06 | 1750 | N15 | E46 | 10 | 10.2 | | A | HSX | 140 | 2 | 2 | 3 |
| 4331 | | LEAR | 10 | 07 | 0006 | N16 | E42 | 10 | 10.2 | | A | HHX | 160 | 2 | 3 | 3 |
| 4331 | | ATHN | 10 | 07 | 0600 | N12 | E38 | 10 | 10.1 | | B | CAO | 130 | 2 | 2 | 3 |
| 4331 | | RAMY | 10 | 07 | 1210 | N13 | E35 | 10 | 10.1 | | B | CAO | 120 | 4 | 3 | 3 |
| 4331 | | BOUL | 10 | 07 | 1501 | N13 | E32 | 10 | 10.0 | | A | HAX | 70 | 2 | 2 | 3 |
| 4331 | | HOLL | 10 | 07 | 1530 | N14 | E33 | 10 | 10.1 | | B | CSI | 160 | 7 | 5 | 3 |
| 4331 | | PALE | 10 | 07 | 1810 | N13 | E31 | 10 | 10.1 | | B | CAO | 90 | 5 | 4 | 3 |
| 4331 | | LEAR | 10 | 08 | 0045 | N13 | E29 | 10 | 10.2 | | B | CAO | 140 | 4 | 4 | 2 |
| 4331 | | ATHN | 10 | 08 | 0700 | N11 | E27 | 10 | 10.3 | | B | CAO | 70 | 4 | 3 | 2 |
| 4331 | | RAMY | 10 | 08 | 1250 | N13 | E23 | 10 | 10.3 | | B | DAO | 140 | 7 | 3 | 4 |
| 4331 | 23853 | MWIL | 10 | 08 | 1445 | N14 | E21 | 10 | 10.2 | 3 | (AP) | | | | | |
| 4331 | | HOLL | 10 | 08 | 1504 | N14 | E22 | 10 | 10.3 | | B | CAO | 120 | 4 | 3 | 4 |
| 4331 | | PALE | 10 | 08 | 1833 | N14 | E21 | 10 | 10.4 | | B | CAO | 90 | 4 | 4 | 2 |
| 4331 | | LEAR | 10 | 09 | 0145 | N13 | E15 | 10 | 10.2 | | B | CAO | 140 | 7 | 4 | 3 |
| 4331 | | ATHN | 10 | 09 | 1100 | N13 | E11 | 10 | 10.3 | | B | CAO | 100 | 5 | 3 | 2 |
| 4331 | | HOLL | 10 | 09 | 1448 | N13 | E08 | 10 | 10.2 | | B | CSO | 110 | 4 | 4 | 4 |
| 4331 | 23853 | MWIL | 10 | 09 | 1500 | N14 | E08 | 10 | 10.2 | 4 | (BP) | | | | | |
| 4331 | | BOUL | 10 | 09 | 1520 | N09 | E09 | 10 | 10.3 | | B | CSC | 160 | 4 | 2 | 2 |
| 4331 | | RAMY | 10 | 09 | 1644 | N13 | E07 | 10 | 10.2 | | B | DAO | 90 | 4 | 3 | 2 |
| 4331 | | PALE | 10 | 09 | 1800 | N13 | E07 | 10 | 10.3 | | B | CSO | 100 | 4 | 3 | 3 |
| 4331 | | LEAR | 10 | 10 | 0000 | N14 | E03 | 10 | 10.2 | | B | CAO | 110 | 5 | 5 | 2 |
| 4331 | | ATHN | 10 | 10 | 0610 | N12 | E01 | 10 | 10.3 | | B | CAO | 100 | 3 | 3 | 3 |
| 4331 | | RAMY | 10 | 10 | 1313 | N13 | W05 | 10 | 10.2 | | B | CAO | 90 | 5 | 3 | 1 |
| 4331 | | BOUL | 10 | 10 | 1431 | N13 | W04 | 10 | 10.3 | | B | CSO | 90 | 4 | 6 | 2 |
| 4331 | 23853 | MWIL | 10 | 10 | 1515 | N13 | W06 | 10 | 10.2 | 4 | (BP) | | | | | |
| 4331 | | HOLL | 10 | 10 | 1550 | N13 | W06 | 10 | 10.2 | | A | HSX | 130 | 3 | 2 | 3 |
| 4331 | | PALE | 10 | 10 | 1845 | N13 | W08 | 10 | 10.2 | | A | HSX | 100 | 2 | 2 | 3 |
| 4331 | | LEAR | 10 | 11 | 0205 | N14 | W11 | 10 | 10.3 | | A | HSX | 60 | 2 | 2 | 3 |
| 4331 | | ATHN | 10 | 11 | 0600 | N13 | W12 | 10 | 10.3 | | B | DAO | 70 | 2 | 2 | 3 |
| 4331 | | RAMY | 10 | 11 | 1220 | N14 | W17 | 10 | 10.2 | | B | CAO | 60 | 4 | 4 | 4 |
| 4331 | | HOLL | 10 | 11 | 1540 | N14 | W18 | 10 | 10.3 | | B | CSO | 120 | 5 | 3 | 2 |
| 4331 | 23853 | MWIL | 10 | 11 | 1600 | N13 | W18 | 10 | 10.3 | 4 | (AP) | | | | | |
| 4331 | | PALE | 10 | 11 | 1800 | N13 | W20 | 10 | 10.2 | | B | CAO | 70 | 3 | 3 | 4 |
| 4331 | | LEAR | 10 | 12 | 0018 | N13 | W23 | 10 | 10.3 | | B | DSO | 50 | 2 | 2 | 4 |
| 4331 | | ATHN | 10 | 12 | 0630 | N13 | W26 | 10 | 10.3 | | B | CAO | 70 | 3 | 3 | 3 |
| 4331 | | RAMY | 10 | 12 | 1210 | N13 | W30 | 10 | 10.2 | | B | CAO | 70 | 3 | 3 | 4 |
| 4331 | | BOUL | 10 | 12 | 1408 | N12 | W33 | 10 | 10.1 | | B | CSO | 60 | 5 | 6 | 3 |
| 4331 | 23853 | MWIL | 10 | 12 | 1530 | N13 | W32 | 10 | 10.2 | 4 | (AP) | | | | | |
| 4331 | | HOLL | 10 | 12 | 1539 | N14 | W32 | 10 | 10.2 | | A | HAX | 60 | 2 | 2 | 2 |
| 4331 | | PALE | 10 | 12 | 1800 | N13 | W33 | 10 | 10.3 | | A | HAX | 50 | 2 | 2 | 3 |
| 4331 | | LEAR | 10 | 13 | 0030 | N12 | W37 | 10 | 10.2 | | A | HSX | 50 | 2 | 2 | 3 |
| 4331 | | ATHN | 10 | 13 | 0630 | N14 | W40 | 10 | 10.2 | | B | CAO | 80 | 2 | 4 | 2 |
| 4331 | | RAMY | 10 | 13 | 1205 | N13 | W44 | 10 | 10.2 | | B | DAO | 60 | 7 | 5 | 4 |
| 4331 | | HOLL | 10 | 13 | 1412 | N13 | W45 | 10 | 10.2 | | B | CSO | 60 | 5 | 4 | 2 |
| 4331 | 23853 | MWIL | 10 | 13 | 1530 | N13 | W45 | 10 | 10.3 | 4 | (AP) | | | | | |
| 4331 | | BOUL | 10 | 13 | 1600 | N13 | W43 | 10 | 10.4 | | B | CSO | 40 | 4 | 3 | 2 |
| 4331 | | PALE | 10 | 13 | 1905 | N13 | W49 | 10 | 10.1 | | B | CSO | 50 | 4 | 3 | 3 |
| 4331 | | LEAR | 10 | 14 | 0035 | N11 | W50 | 10 | 10.3 | | B | CSO | 40 | 3 | 3 | 3 |
| 4331 | | ATHN | 10 | 14 | 0622 | N14 | W53 | 10 | 10.3 | | B | CRO | 40 | 2 | 2 | 3 |
| 4331 | | RAMY | 10 | 14 | 1300 | N14 | W58 | 10 | 10.2 | | B | CAO | 60 | 3 | 3 | 3 |
| 4331 | | HOLL | 10 | 14 | 1456 | N13 | W58 | 10 | 10.2 | | B | CSO | 50 | 4 | 4 | 2 |
| 4331 | | BOUL | 10 | 14 | 1503 | N15 | W58 | 10 | 10.2 | | A | AXX | 30 | 2 | 3 | 2 |
| 4331 | 23853 | MWIL | 10 | 14 | 1530 | N13 | W58 | 10 | 10.3 | 4 | (AP) | | | | | |
| 4331 | | PALE | 10 | 14 | 1835 | N13 | W61 | 10 | 10.2 | | B | CSO | 30 | 2 | 3 | 3 |
| 4331 | | LEAR | 10 | 15 | 0134 | N13 | W64 | 10 | 10.2 | | A | HSX | 20 | 1 | 1 | 2 |
| 4331 | | ATHN | 10 | 15 | 0600 | N13 | W68 | 10 | 10.1 | | A | HKX | 90 | 1 | 4 | 3 |
| 4331 | | HOLL | 10 | 15 | 1457 | N13 | W71 | 10 | 10.3 | | A | HRX | 20 | 1 | 1 | 4 |
| 4331 | 23853 | MWIL | 10 | 15 | 1500 | N13 | W70 | 10 | 10.3 | 4 | (AP) | | | | | |
| 4331 | | BOUL | 10 | 15 | 1630 | N14 | W72 | 10 | 10.2 | | A | AXX | 20 | 1 | 1 | 3 |
| 4331 | | PALE | 10 | 15 | 1950 | N14 | W74 | 10 | 10.2 | | A | HSX | 20 | 1 | 1 | 3 |
| 4331 | | LEAR | 10 | 16 | 0120 | N14 | W75 | 10 | 10.4 | | A | HRX | 10 | 1 | 1 | 2 |
| 4331 | | RAMY | 10 | 16 | 1223 | N14 | W87 | 10 | 9.9 | | A | HAX | 20 | 1 | 2 | 2 |
| 4331 | 23853 | MWIL | 10 | 16 | 1715 | N13 | W86 | 10 | 10.2 | 2 | AP | | | | | |
| 4337 | | RAMY | 10 | 08 | 1250 | N07 | E24 | 10 | 10.3 | | A | AXX | 10 | 1 | 1 | 4 |
| 4337 | 23857 | MWIL | 10 | 08 | 1445 | N07 | E23 | 10 | 10.3 | 3 | AF | | | | | |
| 4337 | | HOLL | 10 | 08 | 1504 | N07 | E22 | 10 | 10.3 | | A | AXX | | 1 | | 4 |

# REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hem) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4337 | | PALE | 10 | 08 | 1833 | N07 | E22 | 10 | 10.4 | | B | BXO | 10 | 2 | 3 | 2 |
| 4337 | | LEAR | 10 | 09 | 0145 | N06 | E17 | 10 | 10.3 | | B | BXO | 10 | 4 | 3 | 3 |
| 4337 | | ATHN | 10 | 09 | 1100 | N09 | E13 | 10 | 10.4 | | A | BXO | 20 | 2 | 2 | 2 |
| 4337 | | HOLL | 10 | 09 | 1448 | N06 | E11 | 10 | 10.4 | | B | BXO | 40 | 9 | 3 | 4 |
| 4337 | 23857 | MWIL | 10 | 09 | 1500 | N06 | E10 | 10 | 10.4 | 3 | ( B) | | | | | |
| 4337 | | BOUL | 10 | 09 | 1520 | N05 | E10 | 10 | 10.4 | | B | BXO | 20 | 4 | 4 | 2 |
| 4337 | | RAMY | 10 | 09 | 1644 | N06 | E09 | 10 | 10.4 | | B | DAO | 50 | 8 | 4 | 2 |
| 4337 | | PALE | 10 | 09 | 1800 | N06 | E08 | 10 | 10.3 | | B | CSO | 50 | 8 | 4 | 3 |
| 4337 | | LEAR | 10 | 10 | 0000 | N06 | E05 | 10 | 10.4 | | B | CRO | 20 | 7 | 4 | 2 |
| 4337 | | ATHN | 10 | 10 | 0610 | N05 | E02 | 10 | 10.4 | | B | BXO | 30 | 4 | 3 | 3 |
| 4337 | | RAMY | 10 | 10 | 1313 | N06 | W02 | 10 | 10.4 | | B | DAO | 60 | 11 | 5 | 1 |
| 4337 | | BOUL | 10 | 10 | 1431 | N07 | E03 | 10 | 10.8 | | B | BXO | 30 | 9 | 4 | 2 |
| 4337 | 23857 | MWIL | 10 | 10 | 1515 | N06 | W04 | 10 | 10.3 | 3 | ( B) | | | | | |
| 4337 | | HOLL | 10 | 10 | 1550 | N06 | W03 | 10 | 10.4 | | B | BXO | 40 | 11 | 4 | 3 |
| 4337 | | PALE | 10 | 10 | 1845 | N07 | W06 | 10 | 10.3 | | B | DRO | 40 | 9 | 5 | 3 |
| 4337 | | LEAR | 10 | 11 | 0205 | N06 | W09 | 10 | 10.4 | | B | CRO | 40 | 10 | 4 | 3 |
| 4337 | | ATHN | 10 | 11 | 0600 | N05 | W11 | 10 | 10.4 | | B | DAO | 110 | 5 | 5 | 3 |
| 4337 | | RAMY | 10 | 11 | 1220 | N06 | W15 | 10 | 10.4 | | B | DAO | 60 | 10 | 5 | 4 |
| 4337 | | HOLL | 10 | 11 | 1540 | N06 | W17 | 10 | 10.4 | | B | BXO | 30 | 10 | 5 | 2 |
| 4337 | 23857 | MWIL | 10 | 11 | 1600 | N06 | W17 | 10 | 10.4 | 4 | ( B) | | | | | |
| 4337 | | PALE | 10 | 11 | 1800 | N07 | W18 | 10 | 10.4 | | B | CSO | 50 | 10 | 5 | 4 |
| 4337 | | LEAR | 10 | 12 | 0018 | N05 | W23 | 10 | 10.3 | | B | DSO | 70 | 7 | 5 | 4 |
| 4337 | | ATHN | 10 | 12 | 0630 | N08 | W24 | 10 | 10.5 | | B | DSO | 50 | 3 | 4 | 3 |
| 4337 | | RAMY | 10 | 12 | 1210 | N06 | W29 | 10 | 10.3 | | B | CAO | 20 | 6 | 4 | 4 |
| 4337 | 23857 | MWIL | 10 | 12 | 1530 | N06 | W34 | 10 | 10.1 | 4 | (AP) | | | | | |
| 4337 | | HOLL | 10 | 12 | 1539 | N06 | W34 | 10 | 10.1 | | B | CAO | 10 | 4 | 3 | 2 |
| 4337 | | PALE | 10 | 12 | 1800 | N07 | W35 | 10 | 10.1 | | B | BXO | 20 | 4 | 3 | 3 |
| 4337 | | LEAR | 10 | 13 | 0030 | N04 | W38 | 10 | 10.2 | | A | AXX | 10 | 2 | 1 | 3 |
| 4337 | | ATHN | 10 | 13 | 0630 | N07 | W40 | 10 | 10.3 | | B | BXO | 20 | 3 | 3 | 2 |
| 4337 | | RAMY | 10 | 13 | 1205 | N06 | W45 | 10 | 10.1 | | B | CAO | 30 | 4 | 3 | 4 |
| 4337 | | HOLL | 10 | 13 | 1412 | N06 | W46 | 10 | 10.1 | | A | AXX | 10 | 2 | 2 | 2 |
| 4337 | 23857 | MWIL | 10 | 13 | 1530 | N06 | W47 | 10 | 10.1 | 3 | (AP) | | | | | |
| 4337 | | PALE | 10 | 13 | 1905 | N07 | W49 | 10 | 10.1 | | A | AXX | 10 | 2 | 1 | 3 |
| 4337 | | HOLL | 10 | 14 | 1456 | N06 | W59 | 10 | 10.2 | | A | AXX | | 1 | | 2 |
| | | BOUL | 10 | 10 | 1431 | S11 | E05 | 10 | 11.0 | | A | AXX | | 1 | | 2 |
| | | LEAR | 10 | 07 | 0006 | S02 | E58 | 10 | 11.3 | | A | AXX | 20 | 2 | 2 | 3 |
| 4333 | | RAMY | 10 | 06 | 1217 | S08 | E73 | 10 | 12.0 | | B | DAO | 110 | 4 | 5 | 4 |
| 4333 | | BOUL | 10 | 06 | 1502 | S10 | E67 | 10 | 11.7 | | B | DSO | 90 | 4 | 5 | 3 |
| 4333 | 23856 | MWIL | 10 | 06 | 1530 | S07 | E69 | 10 | 11.8 | 4 | B | | | | | |
| 4333 | | HOLL | 10 | 06 | 1546 | S09 | E70 | 10 | 11.9 | | B | BXO | 140 | 4 | 6 | 3 |
| 4333 | | PALE | 10 | 06 | 1750 | S08 | E68 | 10 | 11.8 | | B | DSO | 110 | 3 | 6 | 3 |
| 4333 | | LEAR | 10 | 07 | 0006 | S06 | E65 | 10 | 11.9 | | B | DSO | 180 | 10 | 7 | 3 |
| 4333 | | ATHN | 10 | 07 | 0600 | S10 | E60 | 10 | 11.8 | | B | DSO | 100 | 3 | 5 | 3 |
| 4333 | | RAMY | 10 | 07 | 1210 | S07 | E56 | 10 | 11.7 | | B | DAO | 110 | 12 | 13 | 3 |
| 4333 | | RAMY | 10 | 07 | 1210 | S07 | E58 | 10 | 11.9 | | B | DAO | 110 | 12 | 8 | 3 |
| 4333 | | BOUL | 10 | 07 | 1501 | S09 | E55 | 10 | 11.8 | | B | DSO | 110 | 5 | 8 | 3 |
| 4333 | | HOLL | 10 | 07 | 1530 | S08 | E55 | 10 | 11.8 | | B | DSI | 240 | 7 | 10 | 3 |
| 4333 | | PALE | 10 | 07 | 1810 | S09 | E54 | 10 | 11.8 | | B | DSO | 100 | 5 | 8 | 3 |
| 4333 | | LEAR | 10 | 08 | 0045 | S08 | E50 | 10 | 11.8 | | B | DSO | 130 | 7 | 8 | 2 |
| 4333 | | ATHN | 10 | 08 | 0700 | S11 | E45 | 10 | 11.7 | | B | DSO | 100 | 5 | 8 | 2 |
| 4333 | | RAMY | 10 | 08 | 1250 | S08 | E45 | 10 | 11.9 | | B | DAO | 150 | 17 | 9 | 4 |
| 4333 | 23856 | MWIL | 10 | 08 | 1445 | S08 | E43 | 10 | 11.8 | 5 | B | | | | | |
| 4333 | | HOLL | 10 | 08 | 1504 | S07 | E43 | 10 | 11.8 | | B | DSO | 130 | 12 | 8 | 4 |
| 4333 | | PALE | 10 | 08 | 1833 | S09 | E41 | 10 | 11.9 | | B | DSO | 90 | 10 | 8 | 2 |
| 4333 | | LEAR | 10 | 09 | 0145 | S08 | E36 | 10 | 11.8 | | B | DSO | 80 | 10 | 7 | 3 |
| 4333 | | ATHN | 10 | 09 | 1100 | S09 | E32 | 10 | 11.9 | | B | DSO | 60 | 4 | 7 | 2 |
| 4333 | | HOLL | 10 | 09 | 1448 | S08 | E29 | 10 | 11.8 | | B | CRO | 60 | 9 | 8 | 4 |
| 4333 | 23856 | MWIL | 10 | 09 | 1500 | S08 | E29 | 10 | 11.8 | 3 | ( B) | | | | | |
| 4333 | | BOUL | 10 | 09 | 1520 | S11 | E27 | 10 | 11.7 | | B | CAO | 50 | 7 | 8 | 2 |
| 4333 | | RAMY | 10 | 09 | 1644 | S08 | E28 | 10 | 11.8 | | B | DAO | 290 | 7 | 7 | 2 |
| 4333 | | PALE | 10 | 09 | 1800 | S09 | E27 | 10 | 11.8 | | B | DSO | 60 | 7 | 8 | 3 |
| 4333 | | LEAR | 10 | 10 | 0000 | S09 | E24 | 10 | 11.8 | | B | DSO | 30 | 8 | 7 | 2 |
| 4333 | | ATHN | 10 | 10 | 0610 | S09 | E21 | 10 | 11.8 | | B | DRO | 40 | 6 | 8 | 3 |
| 4333 | | RAMY | 10 | 10 | 1313 | S09 | E17 | 10 | 11.8 | | B | DAO | 40 | 5 | 9 | 1 |
| 4333 | | BOUL | 10 | 10 | 1431 | S08 | E14 | 10 | 11.7 | | B | BXO | 30 | 9 | 9 | 2 |
| 4333 | 23856 | MWIL | 10 | 10 | 1515 | S09 | E15 | 10 | 11.8 | 3 | ( B) | | | | | |
| 4333 | | HOLL | 10 | 10 | 1550 | S08 | E16 | 10 | 11.9 | | B | BXO | 30 | 6 | 8 | 3 |
| 4333 | | PALE | 10 | 10 | 1845 | S09 | E14 | 10 | 11.8 | | B | BXO | 30 | 11 | 9 | 3 |

# REGIONS OF SUNSPOT ACTIVITY
## (ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4333 | | LEAR | 10 | 11 | 0205 | S08 | E10 | 10 | 11.8 | | B | CSO | 50 | 8 | 9 | 3 |
| 4333 | | ATHN | 10 | 11 | 0600 | S09 | E03 | 10 | 11.5 | | B | DSO | 50 | 2 | 1 | 3 |
| 4333 | | RAMY | 10 | 11 | 1220 | S08 | E01 | 10 | 11.6 | | B | CAO | 30 | 5 | 2 | 4 |
| 4333 | | HOLL | 10 | 11 | 1540 | S08 | W02 | 10 | 11.5 | | B | BXO | 10 | 4 | 2 | 2 |
| 4333 | 23856 | MWIL | 10 | 11 | 1600 | S09 | E01 | 10 | 11.7 | 3 | (AP) | | | | | |
| 4333 | | PALE | 10 | 11 | 1800 | S09 | W02 | 10 | 11.6 | | B | BXO | 20 | 5 | 3 | 4 |
| 4333 | | LEAR | 10 | 12 | 0018 | S09 | W06 | 10 | 11.6 | | B | CRO | 30 | 4 | 3 | 4 |
| 4333 | | ATHN | 10 | 12 | 0630 | S08 | W08 | 10 | 11.7 | | B | CSO | 30 | 2 | 3 | 3 |
| 4333 | | RAMY | 10 | 12 | 1210 | S08 | W11 | 10 | 11.7 | | B | BXO | 20 | 6 | 5 | 4 |
| 4333 | | BOUL | 10 | 12 | 1408 | S06 | W14 | 10 | 11.5 | | A | AXX | | 1 | | 3 |
| 4333 | 23856 | MWIL | 10 | 12 | 1530 | S08 | W14 | 10 | 11.6 | 3 | (AP) | | | | | |
| 4333 | | HOLL | 10 | 12 | 1539 | S07 | W15 | 10 | 11.5 | | A | AXX | | 2 | 1 | 2 |
| 4333 | | PALE | 10 | 12 | 1800 | S08 | W17 | 10 | 11.5 | | A | AXX | 10 | 1 | 1 | 3 |
| 4333 | | RAMY | 10 | 13 | 1205 | S08 | W23 | 10 | 11.8 | | B | BXO | 10 | 3 | 7 | 4 |
| 4333 | | HOLL | 10 | 13 | 1412 | S07 | W27 | 10 | 11.6 | | A | AXX | | 1 | | 2 |
| | | LEAR | 10 | 12 | 0018 | S14 | E05 | 10 | 12.4 | | A | AXX | | 1 | 1 | 4 |
| | | LEAR | 10 | 09 | 0145 | N18 | E50 | 10 | 12.9 | | A | AXX | 10 | 1 | 1 | 3 |
| 4335 | | PALE | 10 | 07 | 1810 | N22 | E73 | 10 | 13.4 | | A | AX | 20 | 2 | 2 | 3 |
| 4335 | | LEAR | 10 | 08 | 0045 | N23 | E70 | 10 | 13.4 | | A | AXX | 10 | 1 | 1 | 2 |
| 4335 | | RAMY | 10 | 08 | 1250 | N23 | E65 | 10 | 13.5 | | B | CAO | 40 | 4 | 5 | 4 |
| 4335 | 23858 | MWIL | 10 | 08 | 1445 | N25 | E62 | 10 | 13.4 | 2 | B | | | | | |
| 4335 | | HOLL | 10 | 08 | 1504 | N22 | E60 | 10 | 13.2 | | B | BXO | 20 | 6 | 9 | 4 |
| 4335 | | PALE | 10 | 08 | 1833 | N22 | E61 | 10 | 13.5 | | B | BXO | 40 | 4 | 5 | 2 |
| 4335 | | LEAR | 10 | 09 | 0145 | N23 | E57 | 10 | 13.5 | | B | CSO | 70 | 7 | 6 | 3 |
| 4335 | | ATHN | 10 | 09 | 1100 | N23 | E51 | 10 | 13.4 | | B | CAO | 30 | 4 | 4 | 2 |
| 4335 | | HOLL | 10 | 09 | 1448 | N23 | E49 | 10 | 13.4 | | B | DSO | 110 | 13 | 10 | 4 |
| 4335 | 23858 | MWIL | 10 | 09 | 1500 | N22 | E47 | 10 | 13.2 | 4 | (BP) | | | | | |
| 4335 | | BOUL | 10 | 09 | 1520 | N17 | E48 | 10 | 13.3 | | B | CRO | 50 | 8 | 5 | 2 |
| 4335 | | RAMY | 10 | 09 | 1644 | N22 | E47 | 10 | 13.3 | | B | DAO | 110 | 13 | 5 | 2 |
| 4335 | | PALE | 10 | 09 | 1800 | N22 | E47 | 10 | 13.4 | | B | DSO | 90 | 12 | 6 | 3 |
| 4335 | | LEAR | 10 | 10 | 0000 | N22 | E43 | 10 | 13.3 | | B | DSO | 110 | 13 | 6 | 2 |
| 4335 | | ATHN | 10 | 10 | 0610 | N21 | E39 | 10 | 13.2 | | B | DSO | 90 | 8 | 6 | 3 |
| 4335 | | RAMY | 10 | 10 | 1313 | N21 | E35 | 10 | 13.2 | | B | DAO | 90 | 5 | 7 | 1 |
| 4335 | | BOUL | 10 | 10 | 1431 | N22 | E33 | 10 | 13.1 | | B | BXO | 60 | 13 | 7 | 2 |
| 4335 | 23858 | MWIL | 10 | 10 | 1515 | N21 | E33 | 10 | 13.2 | 4 | (BP) | | | | | |
| 4335 | | HOLL | 10 | 10 | 1550 | N21 | E33 | 10 | 13.2 | | B | DAC | 170 | 8 | 7 | 3 |
| 4335 | | PALE | 10 | 10 | 1845 | N21 | E32 | 10 | 13.2 | | B | DAO | 120 | 12 | 7 | 3 |
| 4335 | | LEAR | 10 | 11 | 0205 | N21 | E27 | 10 | 13.2 | | B | DSO | 100 | 5 | 6 | 3 |
| 4335 | | ATHN | 10 | 11 | 0600 | N20 | E25 | 10 | 13.2 | | B | DAO | 150 | 6 | 5 | 3 |
| 4335 | | RAMY | 10 | 11 | 1220 | N21 | E22 | 10 | 13.2 | | B | DSO | 90 | 13 | 6 | 4 |
| 4335 | | HOLL | 10 | 11 | 1540 | N21 | E19 | 10 | 13.1 | | B | DSO | 100 | 11 | 6 | 2 |
| 4335 | 23858 | MWIL | 10 | 11 | 1600 | N21 | E19 | 10 | 13.1 | 4 | ( B) | | | | | |
| 4335 | | PALE | 10 | 11 | 1800 | N21 | E19 | 10 | 13.2 | | B | DAO | 100 | 8 | 7 | 4 |
| 4335 | | LEAR | 10 | 12 | 0018 | N22 | E14 | 10 | 13.1 | | B | DAO | 180 | 19 | 6 | 4 |
| 4335 | | ATHN | 10 | 12 | 0630 | N21 | E18 | 10 | 13.7 | | B | DAO | 130 | 12 | 6 | 3 |
| 4335 | | RAMY | 10 | 12 | 1210 | N22 | E10 | 10 | 13.3 | | B | DKO | 230 | 23 | 8 | 4 |
| 4335 | | BOUL | 10 | 12 | 1408 | N23 | E17 | 10 | 13.9 | | B | DSO | 110 | 9 | 7 | 3 |
| 4335 | 23858 | MWIL | 10 | 12 | 1530 | N21 | E06 | 10 | 13.1 | 5 | ( B) | | | | | |
| 4335 | | HOLL | 10 | 12 | 1539 | N22 | E07 | 10 | 13.2 | | B | DHI | 250 | 21 | 6 | 2 |
| 4335 | | PALE | 10 | 12 | 1800 | N22 | E06 | 10 | 13.2 | | B | DSO | 210 | 16 | 8 | 3 |
| 4335 | | LEAR | 10 | 13 | 0030 | N22 | E02 | 10 | 13.2 | | B | DHO | 190 | 18 | 7 | 3 |
| 4335 | | ATHN | 10 | 13 | 0630 | N21 | W02 | 10 | 13.1 | | B | DHO | 240 | 7 | 8 | 2 |
| 4335 | | RAMY | 10 | 13 | 1205 | N22 | W05 | 10 | 13.1 | | B | DKO | 290 | 28 | 7 | 4 |
| 4335 | | HOLL | 10 | 13 | 1412 | N22 | W06 | 10 | 13.1 | | B | DKI | 280 | 15 | 7 | 2 |
| 4335 | 23858 | MWIL | 10 | 13 | 1530 | N21 | W08 | 10 | 13.0 | 5 | ( B) | | | | | |
| 4335 | | BOUL | 10 | 13 | 1600 | N20 | W08 | 10 | 13.1 | | B | DHI | 310 | 18 | 6 | 2 |
| 4335 | | PALE | 10 | 13 | 1905 | N21 | W10 | 10 | 13.0 | | B | DHI | 290 | 17 | 5 | 3 |
| 4335 | | LEAR | 10 | 14 | 0035 | N20 | W13 | 10 | 13.0 | | BG | DHO | 300 | 23 | 8 | 3 |
| 4335 | | ATHN | 10 | 14 | 0622 | N21 | W17 | 10 | 13.0 | | B | DHO | 290 | 12 | 8 | 3 |
| 4335 | | RAMY | 10 | 14 | 1300 | N22 | W20 | 10 | 13.0 | | B | DKO | 430 | 27 | 8 | 3 |
| 4335 | | HOLL | 10 | 14 | 1456 | N21 | W21 | 10 | 13.0 | | BG | DHI | 470 | 25 | 8 | 2 |
| 4335 | | BOUL | 10 | 14 | 1503 | N21 | W21 | 10 | 13.0 | | B | DHI | 330 | 16 | 6 | 2 |
| 4335 | 23858 | MWIL | 10 | 14 | 1530 | N21 | W22 | 10 | 13.0 | 5 | ( B) | | | | | |
| 4335 | | PALE | 10 | 14 | 1835 | N21 | W23 | 10 | 13.0 | | BG | DKI | 510 | 24 | 9 | 3 |
| 4335 | | LEAR | 10 | 15 | 0134 | N21 | W27 | 10 | 13.0 | | BG | DKI | 550 | 20 | 7 | 2 |
| 4335 | | ATHN | 10 | 15 | 0600 | N18 | W30 | 10 | 13.0 | | BG | DKO | 680 | 10 | 9 | 3 |
| 4335 | | HOLL | 10 | 15 | 1457 | N21 | W33 | 10 | 13.1 | | BG | DKC | 830 | 21 | 8 | 4 |
| 4335 | 23858 | MWIL | 10 | 15 | 1500 | N21 | W35 | 10 | 12.9 | 5 | ( B) | | | | | |

# REGIONS OF SUNSPOT ACTIVITY
## (ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Mo | Day | Time (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4335 | | BOUL | 10 | 15 | 1630 | N23 | W35 | 10 | 13.0 | | A | DHI | 760 | 35 | 9 | 3 |
| 4335 | | PALE | 10 | 15 | 1950 | N22 | W36 | 10 | 13.1 | | BG | DKI | 850 | 30 | 9 | 3 |
| 4335 | | LEAR | 10 | 16 | 0120 | N21 | W40 | 10 | 13.0 | | BGD | DKC | 780 | 25 | 8 | 2 |
| 4335 | | ATHN | 10 | 16 | 0900 | N20 | W45 | 10 | 12.9 | | BG | EKO | 670 | 8 | 12 | 2 |
| 4335 | | RAMY | 10 | 16 | 1223 | N22 | W48 | 10 | 12.8 | | BG | DKI | 660 | 31 | 10 | 2 |
| 4335 | | BOUL | 10 | 16 | 1440 | N21 | W49 | 10 | 12.9 | | B | DHI | 720 | 23 | 7 | 2 |
| 4335 | | HOLL | 10 | 16 | 1445 | N22 | W47 | 10 | 13.0 | | BGD | DKI | 850 | 30 | 9 | 4 |
| 4335 | 23858 | MWIL | 10 | 16 | 1715 | N21 | W48 | 10 | 13.0 | 5 | ( D) | | | | | |
| 4335 | | PALE | 10 | 16 | 1808 | N22 | W49 | 10 | 13.0 | | BGD | DKI | 890 | 18 | 9 | 3 |
| 4335 | | LEAR | 10 | 17 | 0043 | N22 | W54 | 10 | 12.9 | | BGD | DKI | 980 | 23 | 8 | 3 |
| 4335 | | ATHN | 10 | 17 | 0630 | N23 | W56 | 10 | 13.0 | | BGD | DKI | 870 | 35 | 10 | 3 |
| 4335 | | RAMY | 10 | 17 | 1216 | N21 | W61 | 10 | 12.8 | | B | EKI | 700 | 28 | 11 | 4 |
| 4335 | | BOUL | 10 | 17 | 1522 | N23 | W65 | 10 | 12.6 | | B | DHI | 370 | 26 | 11 | 2 |
| 4335 | | HOLL | 10 | 17 | 1610 | N21 | W61 | 10 | 13.0 | | B | DKI | 640 | 17 | 8 | 2 |
| 4335 | | PALE | 10 | 17 | 1804 | N22 | W64 | 10 | 12.8 | | B | DKI | 590 | 24 | 10 | 3 |
| 4335 | | LEAR | 10 | 18 | 0007 | N21 | W65 | 10 | 13.0 | | BG | EKI | 840 | 11 | 10 | 2 |
| 4335 | | ATHN | 10 | 18 | 0815 | N23 | W70 | 10 | 12.9 | | B | DHO | 640 | 6 | 10 | 2 |
| 4335 | | RAMY | 10 | 18 | 1220 | N20 | W76 | 10 | 12.7 | | B | EKO | 690 | 20 | 15 | 4 |
| 4335 | 23858 | MWIL | 10 | 18 | 1530 | N19 | W72 | 10 | 13.2 | 4 | ( B) | | | | | |
| 4335 | | PALE | 10 | 18 | 1805 | N22 | W76 | 10 | 12.9 | | B | DKI | 440 | 7 | 10 | 3 |
| 4335 | | LEAR | 10 | 19 | 0017 | N21 | W81 | 10 | 12.8 | | B | EKI | 530 | 9 | 11 | 3 |
| 4335 | | ATHN | 10 | 19 | 0900 | N23 | W81 | 10 | 13.1 | | B | DKO | 810 | 2 | 8 | 2 |
| 4335 | | RAMY | 10 | 19 | 1205 | N22 | W83 | 10 | 13.1 | | B | EKO | 240 | 6 | 12 | 2 |
| 4335 | 23858 | MWIL | 10 | 19 | 1515 | N21 | W83 | 10 | 13.3 | 3 | AF | | | | | |
| | | RAMY | 10 | 13 | 1205 | S13 | E05 | 10 | 13.9 | | A | AXX | 10 | 2 | 2 | 4 |
| 4339 | | LEAR | 10 | 11 | 0205 | S12 | E78 | 10 | 17.0 | | A | HSX | 210 | 1 | 1 | 3 |
| 4339 | | ATHN | 10 | 11 | 0600 | S13 | E78 | 10 | 17.1 | | A | HKX | 80 | 1 | 3 | 3 |
| 4339 | | RAMY | 10 | 11 | 1220 | S13 | E72 | 10 | 16.9 | | A | HSX | 60 | 1 | 2 | 4 |
| 4339 | | HOLL | 10 | 11 | 1540 | S12 | E69 | 10 | 16.9 | | A | HSX | 90 | 4 | 2 | 2 |
| 4339 | 23861 | MWIL | 10 | 11 | 1600 | S11 | E70 | 10 | 16.9 | 3 | (AP) | | | | | |
| 4339 | | PALE | 10 | 11 | 1800 | S12 | E70 | 10 | 17.0 | | A | HSX | 60 | 2 | 1 | 4 |
| 4339 | | LEAR | 10 | 12 | 0018 | S12 | E66 | 10 | 17.0 | | A | HSX | 80 | 1 | 1 | 4 |
| 4339 | | ATHN | 10 | 12 | 0630 | S13 | E62 | 10 | 16.9 | | A | HSX | 50 | 2 | 2 | 3 |
| 4339 | | RAMY | 10 | 12 | 1210 | S12 | E59 | 10 | 17.0 | | A | HAX | 50 | 1 | 1 | 4 |
| 4339 | | BOUL | 10 | 12 | 1408 | S13 | E56 | 10 | 16.8 | | A | HRX | 20 | 3 | 1 | 3 |
| 4339 | 23861 | MWIL | 10 | 12 | 1530 | S11 | E56 | 10 | 16.9 | 4 | (AP) | | | | | |
| 4339 | | HOLL | 10 | 12 | 1539 | S12 | E56 | 10 | 16.9 | | A | HAX | 60 | 2 | 2 | 2 |
| 4339 | | PALE | 10 | 12 | 1800 | S12 | E55 | 10 | 16.9 | | A | HSX | 50 | 1 | 1 | 3 |
| 4339 | | LEAR | 10 | 13 | 0030 | S08 | E52 | 10 | 16.9 | | A | HAX | 70 | 1 | 2 | 3 |
| 4339 | | ATHN | 10 | 13 | 0630 | S12 | E49 | 10 | 17.0 | | A | HRX | 30 | 1 | 1 | 2 |
| 4339 | | RAMY | 10 | 13 | 1205 | S13 | E48 | 10 | 17.1 | | B | CAO | 70 | 4 | 6 | 4 |
| 4339 | | HOLL | 10 | 13 | 1412 | S12 | E43 | 10 | 16.8 | | A | HSX | 50 | 1 | 2 | 2 |
| 4339 | 23861 | MWIL | 10 | 13 | 1530 | S11 | E43 | 10 | 16.9 | 4 | (AP) | | | | | |
| 4339 | | BOUL | 10 | 13 | 1600 | S13 | E43 | 10 | 16.9 | | A | HSX | 30 | 1 | 1 | 2 |
| 4339 | | PALE | 10 | 13 | 1905 | S12 | E41 | 10 | 16.9 | | A | HSX | 30 | 1 | 2 | 3 |
| 4339 | | LEAR | 10 | 14 | 0035 | S10 | E39 | 10 | 17.0 | | A | HSX | 30 | 1 | 2 | 3 |
| 4339 | | ATHN | 10 | 14 | 0622 | S12 | E33 | 10 | 16.8 | | A | HSX | 30 | 1 | 1 | 3 |
| 4339 | | RAMY | 10 | 14 | 1300 | S12 | E31 | 10 | 16.9 | | A | HRX | 30 | 1 | 1 | 3 |
| 4339 | | HOLL | 10 | 14 | 1456 | S12 | E30 | 10 | 16.9 | | A | HSX | 40 | 1 | 2 | 2 |
| 4339 | | BOUL | 10 | 14 | 1503 | S12 | E29 | 10 | 16.8 | | A | AXX | 20 | 2 | 2 | 2 |
| 4339 | 23861 | MWIL | 10 | 14 | 1530 | S11 | E31 | 10 | 17.0 | 4 | (AP) | | | | | |
| 4339 | | PALE | 10 | 14 | 1835 | S12 | E28 | 10 | 16.9 | | A | HSX | 20 | 1 | 1 | 3 |
| 4339 | | LEAR | 10 | 15 | 0134 | S12 | E24 | 10 | 16.9 | | A | HSX | 20 | 1 | 1 | 2 |
| 4339 | | ATHN | 10 | 15 | 0600 | S12 | E21 | 10 | 16.8 | | A | HAX | 40 | 1 | 2 | 3 |
| 4339 | | HOLL | 10 | 15 | 1457 | S12 | E17 | 10 | 16.9 | | A | HSX | 20 | 1 | 1 | 4 |
| 4339 | 23861 | MWIL | 10 | 15 | 1500 | S12 | E17 | 10 | 16.9 | 4 | (AP) | | | | | |
| 4339 | | BOUL | 10 | 15 | 1630 | S12 | E15 | 10 | 16.8 | | A | AXX | 10 | 1 | 1 | 3 |
| 4339 | | PALE | 10 | 15 | 1950 | S12 | E14 | 10 | 16.9 | | A | HSX | 20 | 1 | 1 | 3 |
| 4339 | | LEAR | 10 | 16 | 0120 | S13 | E11 | 10 | 16.9 | | A | HSX | 20 | 1 | 2 | 2 |
| 4339 | | ATHN | 10 | 16 | 0900 | S12 | E07 | 10 | 16.9 | | A | HSX | 40 | 1 | 2 | 2 |
| 4339 | | RAMY | 10 | 16 | 1223 | S13 | E06 | 10 | 17.0 | | B | CAO | 20 | 5 | 5 | 2 |
| 4339 | | BOUL | 10 | 16 | 1440 | S12 | E02 | 10 | 16.8 | | B | HAX | 20 | 2 | 1 | 2 |
| 4339 | | HOLL | 10 | 16 | 1445 | S12 | E07 | 10 | 17.1 | | B | CSO | 30 | 5 | 6 | 4 |
| 4339 | 23861 | MWIL | 10 | 16 | 1715 | S12 | E03 | 10 | 16.9 | 4 | (BP) | | | | | |
| 4339 | | PALE | 10 | 16 | 1808 | S12 | E04 | 10 | 17.1 | | B | CSO | 30 | 2 | 5 | 3 |
| 4339 | | LEAR | 10 | 17 | 0043 | S12 | W03 | 10 | 16.8 | | A | HSX | 20 | 1 | 2 | 3 |
| 4339 | | ATHN | 10 | 17 | 0630 | S10 | W04 | 10 | 17.0 | | A | HSX | 20 | 1 | 1 | 3 |
| 4339 | | RAMY | 10 | 17 | 1216 | S12 | W08 | 10 | 16.9 | | B | CAO | 30 | 5 | 4 | 4 |
| 4339 | | BOUL | 10 | 17 | 1522 | S11 | W12 | 10 | 16.7 | | A | AXX | 10 | 1 | 1 | 2 |

# REGIONS OF SUNSPOT ACTIVITY
## (ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4339 | | HOLL | 10 | 17 | 1610 | S11 | W11 | 10 | 16.8 | | A | AXX | 20 | 1 | 1 | 2 |
| 4339 | | PALE | 10 | 17 | 1804 | S12 | W12 | 10 | 16.8 | | A | HRX | 20 | 1 | 1 | 3 |
| 4339 | | LEAR | 10 | 18 | 0007 | S12 | W16 | 10 | 16.8 | | A | AXX | 10 | 1 | 2 | 2 |
| 4339 | | ATHN | 10 | 18 | 0815 | S11 | W17 | 10 | 17.1 | | A | HSX | 20 | 1 | 5 | 2 |
| 4339 | | RAMY | 10 | 18 | 1220 | S13 | W22 | 10 | 16.9 | | B | CAO | 20 | 3 | 3 | 4 |
| 4339 | 23861 | MWIL | 10 | 18 | 1530 | S13 | W22 | 10 | 17.0 | 4 | (BP) | | | | | |
| 4339 | | PALE | 10 | 18 | 1805 | S12 | W25 | 10 | 16.9 | | A | HRX | 10 | 1 | 1 | 3 |
| 4339 | | LEAR | 10 | 19 | 0017 | S11 | W28 | 10 | 16.9 | | A | HRX | 10 | 1 | 1 | 3 |
| 4339 | | ATHN | 10 | 19 | 0900 | S12 | W30 | 10 | 17.1 | | A | AXX | 10 | 1 | 1 | 2 |
| 4339 | | RAMY | 10 | 19 | 1205 | S12 | W36 | 10 | 16.8 | | A | HAX | 30 | 1 | 1 | 2 |
| 4339 | | BOUL | 10 | 19 | 1436 | S10 | W38 | 10 | 16.8 | | A | AXX | | 1 | | 2 |
| 4339 | 23861 | MWIL | 10 | 19 | 1515 | S13 | W37 | 10 | 16.8 | 4 | (AP) | | | | | |
| 4339 | | PALE | 10 | 19 | 2103 | S11 | W41 | 10 | 16.8 | | A | AXX | | 1 | | 2 |
| 4339 | | LEAR | 10 | 20 | 0021 | S11 | W43 | 10 | 16.8 | | A | AXX | | 1 | | 3 |
| 4339 | | RAMY | 10 | 20 | 1250 | S12 | W49 | 10 | 16.8 | | A | HRX | 20 | 1 | 1 | 2 |
| 4339 | 23861 | MWIL | 10 | 20 | 1515 | S12 | W50 | 10 | 16.9 | 3 | (AP) | | | | | |
| 4339 | | LEAR | 10 | 20 | 2315 | S13 | W54 | 10 | 16.9 | | A | AXX | 10 | 1 | 1 | 4 |
| 4339 | | LEAR | 10 | 21 | 0001 | S13 | W54 | 10 | 16.9 | | A | AXX | 10 | 1 | 1 | 4 |
| 4340 | | RAMY | 10 | 11 | 1220 | S07 | E81 | 10 | 17.6 | | B | DAO | 90 | 2 | 12 | 4 |
| 4340 | | HOLL | 10 | 11 | 1540 | S06 | E79 | 10 | 17.6 | | B | DSO | 20 | 2 | 7 | 2 |
| 4340 | 23862 | MWIL | 10 | 11 | 1600 | S05 | E78 | 10 | 17.5 | 2 | B | | | | | |
| 4340 | | PALE | 10 | 11 | 1800 | S08 | E80 | 10 | 17.7 | | B | DSO | 120 | 2 | 10 | 4 |
| 4340 | | LEAR | 10 | 12 | 0018 | S08 | E75 | 10 | 17.6 | | B | DSO | 400 | 2 | 9 | 4 |
| 4340 | | ATHN | 10 | 12 | 0630 | S08 | E73 | 10 | 17.7 | | B | DSO | 100 | 2 | 10 | 3 |
| 4340 | | RAMY | 10 | 12 | 1210 | S06 | E69 | 10 | 17.7 | | B | DAO | 190 | 4 | 7 | 4 |
| 4340 | | BOUL | 10 | 12 | 1408 | S08 | E66 | 10 | 17.5 | | B | BXO | 40 | 7 | 7 | 3 |
| 4340 | 23862 | MWIL | 10 | 12 | 1530 | S05 | E65 | 10 | 17.5 | 4 | ( B) | | | | | |
| 4340 | | HOLL | 10 | 12 | 1539 | S05 | E65 | 10 | 17.5 | | B | DSO | 170 | 4 | 7 | 2 |
| 4340 | | PALE | 10 | 12 | 1800 | S07 | E64 | 10 | 17.5 | | B | DSO | 150 | 4 | 7 | 3 |
| 4340 | | LEAR | 10 | 13 | 0030 | S03 | E63 | 10 | 17.7 | | B | DHO | 180 | 4 | 4 | 3 |
| 4340 | | ATHN | 10 | 13 | 0630 | S07 | E58 | 10 | 17.6 | | B | DSO | 160 | 3 | 9 | 2 |
| 4340 | | RAMY | 10 | 13 | 1205 | S06 | E55 | 10 | 17.6 | | B | DAO | 190 | 8 | 7 | 4 |
| 4340 | | HOLL | 10 | 13 | 1412 | S05 | E53 | 10 | 17.6 | | B | DSO | 180 | 3 | 6 | 2 |
| 4340 | 23862 | MWIL | 10 | 13 | 1530 | S05 | E52 | 10 | 17.5 | 4 | ( B) | | | | | |
| 4340 | | BOUL | 10 | 13 | 1600 | S08 | E53 | 10 | 17.6 | | B | DSO | 130 | 3 | 7 | 2 |
| 4340 | | PALE | 10 | 13 | 1905 | S07 | E50 | 10 | 17.5 | | B | DSO | 160 | 3 | 6 | 3 |
| 4340 | | LEAR | 10 | 14 | 0035 | S04 | E48 | 10 | 17.6 | | B | DAO | 190 | 4 | 6 | 3 |
| 4340 | | ATHN | 10 | 14 | 0622 | S06 | E44 | 10 | 17.6 | | B | DSO | 150 | 4 | 7 | 3 |
| 4340 | | RAMY | 10 | 14 | 1300 | S06 | E41 | 10 | 17.6 | | B | DAO | 210 | 10 | 8 | 3 |
| 4340 | | HOLL | 10 | 14 | 1456 | S05 | E38 | 10 | 17.5 | | B | DSO | 170 | 6 | 6 | 2 |
| 4340 | | BOUL | 10 | 14 | 1503 | S06 | E38 | 10 | 17.5 | | B | DSO | 60 | 5 | 6 | 2 |
| 4340 | 23862 | MWIL | 10 | 14 | 1530 | S06 | E39 | 10 | 17.6 | 4 | ( B) | | | | | |
| 4340 | | PALE | 10 | 14 | 1835 | S06 | E37 | 10 | 17.5 | | B | DSO | 120 | 6 | 6 | 3 |
| 4340 | | LEAR | 10 | 15 | 0134 | S06 | E34 | 10 | 17.6 | | B | DSO | 130 | 5 | 6 | 2 |
| 4340 | | ATHN | 10 | 15 | 0600 | S08 | E30 | 10 | 17.5 | | A | DAO | 90 | 2 | 5 | 3 |
| 4340 | | HOLL | 10 | 15 | 1457 | S05 | E26 | 10 | 17.6 | | B | DSO | 170 | 8 | 6 | 4 |
| 4340 | 23862 | MWIL | 10 | 15 | 1500 | S05 | E26 | 10 | 17.6 | 4 | ( B) | | | | | |
| 4340 | | BOUL | 10 | 15 | 1630 | S05 | E24 | 10 | 17.5 | | B | DSO | 80 | 5 | 5 | 3 |
| 4340 | | PALE | 10 | 15 | 1950 | S05 | E23 | 10 | 17.5 | | B | DSO | 140 | 4 | 5 | 3 |
| 4340 | | LEAR | 10 | 16 | 0120 | S06 | E20 | 10 | 17.6 | | B | DSO | 110 | 4 | 6 | 2 |
| 4340 | | ATHN | 10 | 16 | 0900 | S04 | E17 | 10 | 17.6 | | B | DAO | 70 | 2 | 6 | 2 |
| 4340 | | RAMY | 10 | 16 | 1223 | S06 | E14 | 10 | 17.6 | | B | DAO | 140 | 8 | 6 | 2 |
| 4340 | | BOUL | 10 | 16 | 1440 | S06 | E12 | 10 | 17.5 | | B | DSO | 130 | 4 | 5 | 2 |
| 4340 | | HOLL | 10 | 16 | 1445 | S05 | E15 | 10 | 17.7 | | B | DSO | 130 | 5 | 8 | 4 |
| 4340 | 23862 | MWIL | 10 | 16 | 1715 | S05 | E12 | 10 | 17.6 | 5 | ( B) | | | | | |
| 4340 | | PALE | 10 | 16 | 1808 | S05 | E11 | 10 | 17.6 | | B | DSO | 120 | 5 | 5 | 3 |
| 4340 | | LEAR | 10 | 17 | 0043 | S06 | E07 | 10 | 17.6 | | B | DSO | 70 | 3 | 6 | 3 |
| 4340 | | ATHN | 10 | 17 | 0630 | S04 | E05 | 10 | 17.6 | | B | DSO | 120 | 4 | 6 | 3 |
| 4340 | | RAMY | 10 | 17 | 1216 | S06 | W00 | 10 | 17.5 | | B | DAO | 110 | 10 | 5 | 4 |
| 4340 | | BOUL | 10 | 17 | 1522 | S05 | W03 | 10 | 17.4 | | B | CSO | 80 | 5 | 4 | 2 |
| 4340 | | HOLL | 10 | 17 | 1610 | S05 | W02 | 10 | 17.5 | | B | CSO | 100 | 4 | 5 | 2 |
| 4340 | | PALE | 10 | 17 | 1804 | S05 | W03 | 10 | 17.5 | | B | DSO | 110 | 12 | 5 | 3 |
| 4340 | | LEAR | 10 | 18 | 0007 | S05 | W06 | 10 | 17.6 | | B | DSO | 110 | 5 | 5 | 2 |
| 4340 | | ATHN | 10 | 18 | 0815 | S03 | W09 | 10 | 17.7 | | B | CSO | 70 | 5 | 2 | 2 |
| 4340 | | RAMY | 10 | 18 | 1220 | S05 | W14 | 10 | 17.5 | | B | CAO | 120 | 15 | 7 | 4 |
| 4340 | 23862 | MWIL | 10 | 18 | 1530 | S05 | W14 | 10 | 17.6 | 5 | (BY) | | | | | |
| 4340 | | PALE | 10 | 18 | 1805 | S04 | W17 | 10 | 17.5 | | B | DAO | 80 | 5 | 7 | 3 |
| 4340 | | LEAR | 10 | 19 | 0017 | S03 | W20 | 10 | 17.5 | | B | DSO | 100 | 6 | 6 | 3 |
| 4340 | | ATHN | 10 | 19 | 0900 | S04 | W22 | 10 | 17.7 | | B | CSO | 60 | 2 | 5 | 2 |
| 4340 | | RAMY | 10 | 19 | 1205 | S06 | W26 | 10 | 17.6 | | B | DAO | 90 | 5 | 5 | 2 |

# REGIONS OF SUNSPOT ACTIVITY
## (ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4340 | | BOUL | 10 | 19 | 1436 | S04 | W28 | 10 | 17.5 | | B | CRO | 50 | 2 | 4 | 2 |
| 4340 | 23862 | MWIL | 10 | 19 | 1515 | S05 | W28 | 10 | 17.5 | 4 | (BP) | | | | | |
| 4340 | | PALE | 10 | 19 | 2103 | S04 | W31 | 10 | 17.6 | | B | CSO | 60 | 2 | 5 | 2 |
| 4340 | | LEAR | 10 | 20 | 0021 | S03 | W34 | 10 | 17.5 | | B | CSO | 90 | 2 | 5 | 3 |
| 4340 | | RAMY | 10 | 20 | 1250 | S04 | W42 | 10 | 17.4 | | B | CAO | 80 | 6 | 4 | 2 |
| 4340 | 23862 | MWIL | 10 | 20 | 1515 | S05 | W42 | 10 | 17.5 | 5 | (AP) | | | | | |
| 4340 | | BOUL | 10 | 20 | 1530 | S06 | W42 | 10 | 17.5 | | B | CSO | 40 | 3 | 4 | 2 |
| 4340 | | LEAR | 10 | 20 | 2315 | S04 | W47 | 10 | 17.5 | | B | CSO | 30 | 2 | 2 | 4 |
| 4340 | | LEAR | 10 | 21 | 0001 | S04 | W47 | 10 | 17.5 | | B | CSO | 30 | 2 | 2 | 4 |
| 4340 | | ATHN | 10 | 21 | 0615 | S06 | W51 | 10 | 17.4 | | A | HSX | 60 | 1 | 1 | 1 |
| 4340 | | HOLL | 10 | 21 | 1508 | S04 | W56 | 10 | 17.4 | | A | AXX | 20 | 2 | 1 | 4 |
| 4340 | 23862 | MWIL | 10 | 21 | 1515 | S05 | W56 | 10 | 17.4 | 4 | (AP) | | | | | |
| 4340 | | RAMY | 10 | 21 | 1540 | S04 | W58 | 10 | 17.3 | | A | HRX | 20 | 1 | 1 | 2 |
| 4340 | | PALE | 10 | 21 | 1820 | S03 | W57 | 10 | 17.5 | | A | HSX | 20 | 2 | 1 | 3 |
| 4340 | | LEAR | 10 | 21 | 2325 | S04 | W62 | 10 | 17.3 | | A | HRX | 20 | 1 | 1 | 3 |
| 4340 | | ATHN | 10 | 22 | 0615 | S04 | W69 | 10 | 17.1 | | A | HRX | 20 | 1 | 1 | 2 |
| 4340 | | RAMY | 10 | 22 | 1235 | S03 | W69 | 10 | 17.4 | | A | HRX | 30 | 1 | 1 | 3 |
| 4340 | 23862 | MWIL | 10 | 22 | 1515 | S05 | W69 | 10 | 17.5 | 3 | (AP) | | | | | |
| 4340 | | BOUL | 10 | 22 | 1520 | S07 | W73 | 10 | 17.2 | | A | AXX | 30 | 1 | 1 | 3 |
| 4340 | | HOLL | 10 | 22 | 1543 | S04 | W69 | 10 | 17.5 | | A | AXX | | 1 | | 4 |
| 4340 | | PALE | 10 | 22 | 1850 | S03 | W72 | 10 | 17.4 | | A | AXX | | 1 | | 3 |
| | | RAMY | 10 | 17 | 1216 | N02 | E20 | 10 | 19.0 | | B | BXO | 30 | 3 | 3 | 4 |
| 4342 | | LEAR | 10 | 16 | 0120 | S12 | E43 | 10 | 19.3 | | B | BXO | 10 | 2 | 3 | 2 |
| 4342 | | RAMY | 10 | 16 | 1223 | S12 | E36 | 10 | 19.2 | | A | AXX | 10 | 1 | 1 | 2 |
| 4342 | | HOLL | 10 | 16 | 1445 | S11 | E35 | 10 | 19.2 | | A | AXX | | 1 | | 4 |
| 4342 | 23864 | MWIL | 10 | 16 | 1715 | S10 | E33 | 10 | 19.2 | 2 | (AP) | | | | | |
| 4342 | | ATHN | 10 | 17 | 0630 | S12 | E27 | 10 | 19.3 | | B | BXO | 20 | 3 | 3 | 3 |
| 4342 | | LEAR | 10 | 18 | 0007 | S11 | E17 | 10 | 19.3 | | B | BXO | 10 | 2 | 3 | 2 |
| 4342 | | ATHN | 10 | 18 | 0815 | S10 | E13 | 10 | 19.3 | | B | BRO | 40 | 4 | 3 | 2 |
| 4342 | | RAMY | 10 | 18 | 1220 | S12 | E09 | 10 | 19.2 | | B | CAO | 20 | 8 | 4 | 4 |
| 4342 | 23864 | MWIL | 10 | 18 | 1530 | S11 | E08 | 10 | 19.2 | 4 | ( B) | | | | | |
| 4342 | | PALE | 10 | 18 | 1805 | S11 | E05 | 10 | 19.1 | | B | CSO | 30 | 5 | 6 | 3 |
| 4342 | | LEAR | 10 | 19 | 0017 | S10 | E00 | 10 | 19.0 | | A | HSX | 20 | 1 | 1 | 3 |
| 4342 | | ATHN | 10 | 19 | 0900 | S11 | W02 | 10 | 19.2 | | A | AXX | 20 | 1 | 1 | 2 |
| 4342 | | RAMY | 10 | 19 | 1205 | S12 | W05 | 10 | 19.1 | | B | CAO | 20 | 4 | 5 | 2 |
| 4342 | | BOUL | 10 | 19 | 1436 | S11 | W08 | 10 | 19.0 | | B | BXO | 10 | 3 | 5 | 2 |
| 4342 | 23864 | MWIL | 10 | 19 | 1515 | S11 | W06 | 10 | 19.2 | 4 | (BY) | | | | | |
| 4342 | | PALE | 10 | 19 | 2103 | S11 | W12 | 10 | 19.0 | | A | AXX | 10 | 1 | | 2 |
| 4342 | | LEAR | 10 | 20 | 0021 | S10 | W14 | 10 | 19.0 | | A | AXX | | 2 | 1 | 3 |
| 4342 | | BOUL | 10 | 20 | 1530 | S11 | W24 | 10 | 18.8 | | A | AXX | 10 | 2 | 1 | 2 |
| 4342 | | LEAR | 10 | 20 | 2315 | S12 | W23 | 10 | 19.2 | | B | BXO | 10 | 2 | 3 | 4 |
| 4342 | | LEAR | 10 | 21 | 0001 | S12 | W23 | 10 | 19.3 | | B | BXO | 10 | 2 | 3 | 4 |
| 4342 | | BOUL | 10 | 21 | 1440 | S06 | W36 | 10 | 18.9 | | A | AXX | 10 | 3 | 3 | 2 |
| | 23865 | MWIL | 10 | 18 | 1530 | S10 | E18 | 10 | 20.0 | 3 | (AF) | | | | | |
| 0002 | 23866 | MWIL | 10 | 20 | 1515 | N05 | W08 | 10 | 20.0 | 3 | ( B) | | | | | |
| 0002 | | LEAR | 10 | 21 | 0001 | N04 | W12 | 10 | 20.1 | | A | AXX | 10 | 1 | 1 | 4 |
| 4348 | 23871 | MWIL | 10 | 24 | 1515 | S21 | W56 | 10 | 20.3 | 2 | (AP) | | | | | |
| 4348 | | PALE | 10 | 24 | 1818 | S21 | W55 | 10 | 20.5 | | B | CRO | 20 | 1 | 1 | 3 |
| 4348 | | LEAR | 10 | 25 | 0006 | S21 | W58 | 10 | 20.6 | | A | AXX | | 1 | 1 | 4 |
| 4348 | | RAMY | 10 | 25 | 1135 | S22 | W61 | 10 | 20.8 | | B | CAO | 50 | 3 | 5 | 4 |
| 4348 | | BOUL | 10 | 25 | 1420 | S22 | W63 | 10 | 20.8 | | B | BXO | 10 | 2 | 4 | 2 |
| 4348 | 23871 | MWIL | 10 | 25 | 1530 | S21 | W65 | 10 | 20.7 | 2 | (AP) | | | | | |
| 4348 | | PALE | 10 | 25 | 1800 | S21 | W68 | 10 | 20.5 | | B | BXO | 20 | 2 | 4 | 3 |
| 4341 | 23863 | MWIL | 10 | 15 | 1500 | S16 | E71 | 10 | 21.0 | 3 | (AP) | | | | | |
| 4341 | | BOUL | 10 | 15 | 1630 | S17 | E68 | 10 | 20.9 | | A | AXX | 20 | 1 | 1 | 3 |
| 4341 | | PALE | 10 | 15 | 1950 | S16 | E70 | 10 | 21.1 | | A | AXX | | 1 | | 3 |
| 4341 | | LEAR | 10 | 16 | 0120 | S16 | E66 | 10 | 21.1 | | A | AXX | 10 | 1 | 1 | 2 |
| 4341 | | RAMY | 10 | 16 | 1223 | S17 | E60 | 10 | 21.1 | | A | HAX | 50 | 1 | 1 | 2 |
| 4341 | | HOLL | 10 | 16 | 1445 | S16 | E58 | 10 | 21.0 | | A | AXX | 10 | 2 | 1 | 4 |
| 4341 | 23863 | MWIL | 10 | 16 | 1715 | S16 | E57 | 10 | 21.0 | 4 | (AP) | | | | | |
| 4341 | | PALE | 10 | 16 | 1808 | S16 | E56 | 10 | 21.0 | | A | AXX | | 1 | | 3 |
| 4341 | | LEAR | 10 | 17 | 0043 | S16 | E52 | 10 | 21.0 | | A | AXX | | 1 | 1 | 3 |
| 4341 | | ATHN | 10 | 17 | 0630 | S16 | E49 | 10 | 21.0 | | A | AXX | 10 | 1 | 1 | 3 |
| 4341 | | RAMY | 10 | 17 | 1216 | S17 | E47 | 10 | 21.1 | | A | AXX | 30 | 3 | 2 | 4 |
| 4341 | | BOUL | 10 | 17 | 1522 | S17 | E44 | 10 | 21.0 | | A | AXX | 10 | 2 | 1 | 2 |

# REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4341 | | HOLL | 10 | 17 | 1610 | S16 | E45 | 10 | 21.1 | | A | AXX | 10 | 2 | 2 | 2 |
| 4341 | | PALE | 10 | 17 | 1804 | S16 | E43 | 10 | 21.0 | | A | AXX | 10 | 2 | 1 | 3 |
| 4341 | | LEAR | 10 | 18 | 0007 | S17 | E39 | 10 | 21.0 | | A | AXX | 10 | 2 | 2 | 2 |
| 4341 | | ATHN | 10 | 18 | 0815 | S14 | E37 | 10 | 21.1 | | A | AXX | 10 | 1 | 1 | 2 |
| 4341 | | RAMY | 10 | 18 | 1220 | S16 | E33 | 10 | 21.0 | | A | AXX | 10 | 2 | 1 | 4 |
| 4341 | 23863 | MWIL | 10 | 18 | 1530 | S15 | E31 | 10 | 21.0 | 2 | (AP) | | | | | |
| 4341 | | LEAR | 10 | 19 | 0017 | S15 | E26 | 10 | 21.0 | | A | AXX | | 2 | 1 | 3 |
| 4341 | | LEAR | 10 | 24 | 0004 | S22 | W42 | 10 | 20.8 | | A | AXX | 20 | 3 | 3 | 3 |
| 4341 | | RAMY | 10 | 24 | 1215 | S22 | W48 | 10 | 20.8 | | B | CAO | 40 | 4 | 4 | 3 |
| 4341 | | HOLL | 10 | 24 | 1445 | S21 | W49 | 10 | 20.9 | | B | BXO | 10 | 3 | 5 | 4 |
| 4341 | | HOLL | 10 | 25 | 1600 | S22 | W63 | 10 | 20.8 | | B | BXO | 10 | 2 | 6 | 3 |
| 4346 | 23868 | MWIL | 10 | 22 | 1515 | N05 | W18 | 10 | 21.3 | 2 | (AP) | | | | | |
| 4346 | | BOUL | 10 | 22 | 1520 | N02 | W15 | 10 | 21.5 | | B | BXO | 10 | 3 | 5 | 3 |
| 4346 | | HOLL | 10 | 22 | 1543 | N02 | W18 | 10 | 21.3 | | A | AXX | | 1 | | 4 |
| 4346 | | PALE | 10 | 22 | 1850 | N01 | W21 | 10 | 21.2 | | A | AXX | | 1 | | 3 |
| | | RAMY | 10 | 18 | 1220 | N03 | E43 | 10 | 21.7 | | A | AXX | 10 | 1 | 1 | 4 |
| | | LEAR | 10 | 21 | 2325 | N16 | E23 | 10 | 23.7 | | A | AXX | 10 | 1 | 1 | 3 |
| 0003 | | PALE | 10 | 25 | 1800 | S08 | W21 | 10 | 24.2 | | A | AXX | | 1 | | 3 |
| 0003 | | RAMY | 10 | 26 | 1325 | S08 | W33 | 10 | 24.1 | | A | AXX | 10 | 1 | 1 | 4 |
| | | RAMY | 10 | 25 | 1135 | S17 | W08 | 10 | 24.9 | | A | AXX | 10 | 3 | 1 | 4 |
| 4344 | 23869 | MWIL | 10 | 22 | 1515 | S21 | E50 | 10 | 26.5 | 3 | (AF) | | | | | |
| 4344 | 23869 | MWIL | 10 | 23 | 1515 | S18 | E39 | 10 | 26.6 | 3 | (AF) | | | | | |
| 4344 | | RAMY | 10 | 25 | 1135 | S25 | E08 | 10 | 26.1 | | B | CAO | 20 | 4 | 3 | 4 |
| 4344 | | RAMY | 10 | 26 | 1325 | S22 | W00 | 10 | 26.6 | | A | AXX | 10 | 3 | 1 | 4 |
| 4344 | | BOUL | 10 | 26 | 1511 | S21 | W03 | 10 | 26.4 | | A | AXX | 10 | 1 | | 3 |
| 4347 | | HOLL | 10 | 23 | 1517 | S12 | E38 | 10 | 26.5 | | B | BXO | 10 | 2 | 3 | 3 |
| 4347 | | BOUL | 10 | 23 | 1520 | S11 | E37 | 10 | 26.4 | | B | BXO | 20 | 2 | 3 | 3 |
| 4347 | | PALE | 10 | 23 | 1752 | S13 | E36 | 10 | 26.5 | | B | BXO | 10 | 2 | 3 | 3 |
| 4347 | | LEAR | 10 | 24 | 0004 | S12 | E33 | 10 | 26.5 | | A | AXX | | 1 | 1 | 3 |
| 4347 | | LEAR | 10 | 25 | 0006 | S11 | E21 | 10 | 26.6 | | B | BXO | 10 | 3 | 3 | 4 |
| 4347 | | RAMY | 10 | 25 | 1135 | S13 | E15 | 10 | 26.6 | | A | AXX | 10 | 1 | 1 | 4 |
| 4347 | | HOLL | 10 | 25 | 1600 | S11 | E13 | 10 | 26.6 | | B | BXO | 30 | 6 | 3 | 3 |
| 4347 | | PALE | 10 | 25 | 1800 | S12 | E12 | 10 | 26.7 | | B | BXO | 20 | 2 | 2 | 3 |
| 4347 | 23873 | MWIL | 10 | 27 | 1515 | S09 | W13 | 10 | 26.7 | 3 | (BP) | | | | | |
| | | HOLL | 10 | 25 | 1600 | S03 | E15 | 10 | 26.8 | | A | AXX | | 1 | | 3 |
| 4345 | | LEAR | 10 | 21 | 0001 | S08 | E79 | 10 | 26.9 | | A | AXX | 10 | 1 | 1 | 4 |
| 4345 | | HOLL | 10 | 21 | 1508 | S06 | E68 | 10 | 26.7 | | A | AXX | | 1 | 1 | 4 |
| 4345 | 23867 | MWIL | 10 | 21 | 1515 | S06 | E69 | 10 | 26.8 | 2 | (AP) | | | | | |
| 4345 | | RAMY | 10 | 21 | 1540 | S08 | E69 | 10 | 26.8 | | A | AXX | 10 | 1 | 1 | 2 |
| 4345 | | PALE | 10 | 21 | 1820 | S08 | E68 | 10 | 26.9 | | A | AXX | 10 | 1 | 1 | 3 |
| 4345 | | LEAR | 10 | 21 | 2325 | S07 | E66 | 10 | 26.9 | | A | AXX | 10 | 1 | 1 | 3 |
| 4345 | | ATHN | 10 | 22 | 0615 | S06 | E62 | 10 | 26.9 | | A | AXX | 10 | 1 | 1 | 2 |
| 4345 | | RAMY | 10 | 22 | 1235 | S08 | E58 | 10 | 26.9 | | A | HRX | 20 | 1 | 1 | 3 |
| 4345 | 23867 | MWIL | 10 | 22 | 1515 | S07 | E56 | 10 | 26.8 | 4 | (AP) | | | | | |
| 4345 | | BOUL | 10 | 22 | 1520 | S05 | E57 | 10 | 26.9 | | A | AXX | 20 | 1 | 1 | 3 |
| 4345 | | HOLL | 10 | 22 | 1543 | S07 | E57 | 10 | 26.9 | | A | AXX | | 1 | | 4 |
| 4345 | | PALE | 10 | 22 | 1850 | S08 | E55 | 10 | 26.9 | | A | AXX | 10 | 1 | 1 | 3 |
| 4345 | | LEAR | 10 | 23 | 0005 | S07 | E52 | 10 | 26.9 | | A | AXX | | 1 | 1 | 3 |
| 4345 | 23870 | MWIL | 10 | 23 | 1515 | S04 | E44 | 10 | 26.9 | 4 | (AP) | | | | | |
| 4345 | 23867 | MWIL | 10 | 23 | 1515 | S08 | E38 | 10 | 26.5 | 3 | ( B) | | | | | |
| 4345 | | HOLL | 10 | 23 | 1517 | S07 | E43 | 10 | 26.9 | | A | AXX | | 1 | | 3 |
| 4345 | | BOUL | 10 | 23 | 1520 | S06 | E43 | 10 | 26.9 | | A | AXX | 10 | 1 | 1 | 3 |
| 4345 | | PALE | 10 | 23 | 1752 | S08 | E42 | 10 | 26.9 | | A | AXX | 10 | 1 | 1 | 3 |
| 4345 | | LEAR | 10 | 24 | 0004 | S07 | E38 | 10 | 26.8 | | A | AXX | 10 | 2 | 2 | 3 |
| 4345 | | RAMY | 10 | 24 | 1215 | S07 | E32 | 10 | 26.9 | | A | HSX | 20 | 1 | 1 | 3 |
| 4345 | | HOLL | 10 | 24 | 1445 | S07 | E30 | 10 | 26.9 | | A | AXX | 20 | 1 | | 4 |
| 4345 | 23870 | MWIL | 10 | 24 | 1515 | S06 | E29 | 10 | 26.8 | 2 | (AP) | | | | | |
| 4345 | | PALE | 10 | 24 | 1818 | S07 | E27 | 10 | 26.8 | | A | AXX | 10 | 1 | 1 | 3 |
| 4345 | | LEAR | 10 | 25 | 0006 | S07 | E22 | 10 | 26.7 | | A | AXX | | 1 | 1 | 4 |
| 4345 | | RAMY | 10 | 25 | 1135 | S07 | E18 | 10 | 26.8 | | A | HAX | 20 | 1 | 1 | 4 |
| 4345 | | HOLL | 10 | 25 | 1600 | S06 | E16 | 10 | 26.9 | | A | AXX | | 1 | | 3 |
| 4345 | | PALE | 10 | 25 | 1800 | S07 | E14 | 10 | 26.8 | | A | AXX | | 1 | | 3 |

# REGIONS OF SUNSPOT ACTIVITY
## (ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1983

| NOAA/ USAF Region | Mt Wilson Region | Sta | Observation Time Mo | Day | (UT) | Lat | CMD | CMP Mo | Day | Max H | Mag Class | Spot Class | Corrected Area (10-6 Hemi) | Spot Count | Long. Extent (Deg) | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4345 | | RAMY | 10 | 26 | 1325 | S08 | E04 | 10 | 26.9 | | A | AXX | 10 | 2 | 1 | 4 |
| 4345 | | RAMY | 10 | 27 | 1445 | S08 | W14 | 10 | 26.6 | | B | CRO | 20 | 6 | 3 | 4 |
| 4345 | | PALE | 10 | 27 | 1830 | S08 | W16 | 10 | 26.6 | | B | BXO | 20 | 3 | 3 | 2 |
| 4345 | | LEAR | 10 | 27 | 2342 | S09 | W21 | 10 | 26.4 | | B | BXO | 10 | 2 | 3 | 3 |
| | | LEAR | 10 | 29 | 0032 | S15 | W10 | 10 | 28.3 | | B | BXO | 10 | 2 | 3 | 3 |
| 4350 | | LEAR | 10 | 27 | 2342 | S19 | E20 | 10 | 29.5 | | B | BXO | 20 | 6 | 4 | 3 |
| 4350 | | HOLL | 10 | 28 | 1458 | S18 | E12 | 10 | 29.5 | | B | BXO | 10 | 4 | 3 | 2 |
| 4350 | 23874 | MWIL | 10 | 28 | 1600 | S19 | E11 | 10 | 29.5 | 3 | ( B) | | | | | |
| 4350 | | RAMY | 10 | 29 | 1230 | S17 | E04 | 10 | 29.8 | | A | AXX | | 1 | | 3 |
| 4350 | | LEAR | 10 | 30 | 0010 | S19 | W08 | 10 | 29.4 | | A | AXX | 10 | 2 | 2 | 3 |
| 4350 | 23874 | MWIL | 10 | 30 | 1530 | S19 | W16 | 10 | 29.4 | 4 | ( B) | | | | | |
| 4350 | | BOUL | 10 | 30 | 1645 | S18 | W15 | 10 | 29.6 | | B | BXO | 10 | 3 | 5 | 2 |
| 4350 | | HOLL | 10 | 30 | 1735 | S20 | W15 | 10 | 29.6 | | B | BXO | 30 | 8 | 4 | 2 |
| 4350 | | RAMY | 10 | 30 | 1817 | S19 | W19 | 10 | 29.3 | | B | CRO | 20 | 12 | 5 | 3 |
| 4350 | | PALE | 10 | 30 | 1830 | S19 | W18 | 10 | 29.4 | | B | BXO | 20 | 5 | 5 | 2 |
| 4350 | | LEAR | 10 | 31 | 0001 | S18 | W21 | 10 | 29.4 | | B | CRO | 20 | 8 | 5 | 3 |
| 4350 | | RAMY | 10 | 31 | 1315 | S20 | W29 | 10 | 29.3 | | B | DAO | 50 | 7 | 5 | 2 |
| 4350 | | PALE | 10 | 31 | 1830 | S20 | W32 | 10 | 29.3 | | B | CRO | 30 | 6 | 6 | 3 |
| 4350 | | HOLL | 10 | 31 | 1915 | S23 | W29 | 10 | 29.6 | | B | BXO | 40 | 6 | 6 | 3 |
| 4350 | | LEAR | 11 | 01 | 0003 | S19 | W35 | 10 | 29.3 | | B | CRO | 20 | 8 | 7 | 3 |
| 4350 | | RAMY | 11 | 01 | 1329 | S19 | W43 | 10 | 29.3 | | B | DAO | 50 | 5 | 6 | 3 |
| 4350 | | BOUL | 11 | 01 | 1510 | S19 | W41 | 10 | 29.5 | | B | BXO | 10 | 3 | 2 | 3 |
| 4350 | | HOLL | 11 | 01 | 1607 | S20 | W41 | 10 | 29.5 | | A | AXX | 20 | 3 | 2 | 4 |
| 4350 | | LEAR | 11 | 02 | 0033 | S20 | W46 | 10 | 29.5 | | B | BXO | 10 | 2 | 3 | 3 |
| 4350 | | RAMY | 11 | 02 | 1315 | S20 | W56 | 10 | 29.3 | | B | CRO | 20 | 3 | 4 | 3 |
| 4350 | | BOUL | 11 | 02 | 1344 | S19 | W56 | 10 | 29.3 | | A | AXX | 10 | 1 | | 3 |
| 4350 | | LEAR | 11 | 03 | 0100 | S18 | W66 | 10 | 29.0 | | A | AXX | 10 | 1 | 1 | 2 |
| 4349 | | RAMY | 10 | 25 | 1135 | S06 | E63 | 10 | 30.2 | | A | AXX | 20 | 3 | 2 | 4 |
| 4349 | | HOLL | 10 | 25 | 1600 | S05 | E60 | 10 | 30.2 | | A | AXX | | 1 | | 3 |
| 4349 | | PALE | 10 | 25 | 1800 | S06 | E59 | 10 | 30.2 | | A | AXX | | 1 | | 3 |
| 4349 | | RAMY | 10 | 26 | 1325 | S05 | E51 | 10 | 30.4 | | B | DAO | 40 | 2 | 3 | 4 |
| 4349 | | BOUL | 10 | 26 | 1511 | S06 | E49 | 10 | 30.3 | | A | AXX | 10 | 2 | 2 | 3 |
| 4349 | 23872 | MWIL | 10 | 26 | 1515 | S05 | E49 | 10 | 30.3 | 4, | ( B) | | | | | |
| 4349 | | HOLL | 10 | 26 | 1526 | S05 | E49 | 10 | 30.3 | | B | BXO | 10 | 2 | 3 | 3 |
| 4349 | | PALE | 10 | 26 | 1815 | S05 | E48 | 10 | 30.4 | | B | BXO | 10 | 2 | 3 | 3 |
| 4349 | | LEAR | 10 | 26 | 2258 | S05 | E45 | 10 | 30.3 | | B | BXO | 10 | 2 | 3 | 2 |
| 4349 | | RAMY | 10 | 27 | 1445 | S05 | E35 | 10 | 30.2 | | B | CAO | 30 | 3 | 3 | 4 |
| 4349 | 23872 | MWIL | 10 | 27 | 1515 | S05 | E34 | 10 | 30.2 | 4 | (BP) | | | | | |
| 4349 | | PALE | 10 | 27 | 1830 | S06 | E32 | 10 | 30.2 | | B | CSO | 20 | 2 | 2 | 2 |
| 4349 | | LEAR | 10 | 27 | 2342 | S05 | E29 | 10 | 30.2 | | B | BXO | 10 | 2 | 3 | 3 |
| 4349 | | RAMY | 10 | 28 | 1235 | S07 | E21 | 10 | 30.1 | | A | HRX | 10 | 1 | 1 | 3 |
| 4349 | | HOLL | 10 | 28 | 1458 | S05 | E20 | 10 | 30.1 | | A | AXX | 10 | 1 | | 2 |
| 4349 | | BOUL | 10 | 28 | 1520 | S05 | E19 | 10 | 30.1 | | B | BXO | 10 | 2 | 3 | 3 |
| 4349 | 23872 | MWIL | 10 | 28 | 1600 | S05 | E19 | 10 | 30.1 | 3 | (AP) | | | | | |
| 4349 | | PALE | 10 | 28 | 1814 | S05 | E17 | 10 | 30.0 | | A | AXX | 10 | 1 | 1 | 3 |

October 1983

| Day | Start (UT) | Max (UT) | End (UT) | Imp | Wide-spread Index | Number of Station Reports by Type SWF | SEA | SPA | LF-SPA | SES | Known Flare | NOAA/SESC Region |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0658 | 0711 | 0758 | 1- | 1 | | | 1 | | | 0658 | X-ray |
| 01 | 1206 | 1225 | 1244 | 1 | 3 | 2 | | | | | 1157 | 4324 |
| 01 | 1449 | 1503 | 1516 | 1 | 3 | | 2 | | | | NF | |
| 02 | 0201 | 0206 | 0226 | 1- | 1 | | | 1 | | | 0200 | X-ray |
| 02 | 0520 | 0550 | 0620D | 1- | 1 | | | 1 | | | 0517 | X-ray |
| 02 | 0620 | 0640 | 0800 | 2 | 3 | | | 1 | 1 | 1 | 0614 | 4323 |
| 02 | 0637 | 0642 | 0655 | 1- | 1 | 1 | | | | | 0645E | 4323 |
| 02 | 0731 | 0759 | 0928 | 2 | 3 | | 2 | | | | NF | |
| 02 | 1046 | 1050 | 1134 | 1- | 3 | | 2 | | | | NF | |
| 03 | 0855 | 0908 | 0950 | 1 | 3 | 1 | 2 | | 1 | 1 | 0853 | X-ray |
| 03 | 1113 | 1117 | 1128 | 1 | 1 | | 1 | | | | NF | |
| 03 | 2336 | 2344 | 2354 | 1- | 1 | | | 1 | | | * | |
| 04 | 0751 | 0807 | 0841 | 2 | 3 | | 2 | | | | NF | |
| 04 | 1246 | 1250 | 1323 | 1 | 3 | | 2 | | | | NF | |
| 04 | 1325 | 1330 | 1340 | 1 | 3 | | 2 | | | | NF | |
| 04 | 1343 | 1406 | 1420 | 1 | 3 | | 2 | | | | NF | |
| 05 | 0156 | 0206 | 0247 | 1- | 3 | | 1 | 1 | | 1 | 0151 | X-ray |
| 05 | 1105 | 1112 | 1140 | 1- | 3 | 1 | | 1 | | 1 | 1110E | 4331 |
| 05 | 1500 | 1508 | 1555 | 2 | 5 | 3 | 4 | 1 | 1 | 9 | 1458 | 4328 |
| 05 | 1744 | 1755 | 1843 | 1+ | 3 | | | 1 | | 7 | 1742 | 4328 |
| 06 | 1526 | 1530 | 1546 | 1 | 1 | | 1 | | | | NF | |
| 07 | 0150 | 0159 | 0226 | 1- | 1 | | | 1 | | | 0150 | 4332 |
| 07 | 0334 | 0341 | 0415 | 1- | 1 | | | 1 | | | 0334 | 4328 |
| 07 | 1437 | 1448 | 1533 | 1 | 3 | | 1 | | | 1 | 1430 | 4328 |
| 08 | 0737 | 0744 | 0805 | 1- | 3 | | 1 | 1 | | | 0735 | No data |
| 08 | 0804 | 0815 | 0829 | 1 | 1 | | 1 | | | | NF | |
| 08 | 0921 | 0924 | 0948 | 1 | 3 | | 2 | | | | NF | |
| 09 | 0207 | 0213 | 0300 | 1- | 3 | 1 | | 1 | 1 | 2 | 0204 | 4335 |
| 09 | 0302 | 0308 | 0350 | 1- | 3 | | | 1 | 1 | 1 | 0301 | 4328 |
| 09 | 0540 | 0548 | 0634 | 1- | 3 | | | 1 | 1 | | 0531 | 4328 |
| 09 | 1013 | 1017 | 1028 | 1 | 1 | | 1 | | | | * | |
| 09 | 1033 | 1039 | 1110 | 1 | 1 | | 1 | | | | NF | |
| 09 | 1142 | 1145 | 1225 | 1 | 5 | 1 | 2 | 1 | 1 | 4 | 1141 | No data |
| 10 | 0811 | 0821 | 0941 | 1+ | 5 | 3 | 2 | 1 | 1 | 2 | 0810 | No data |
| 10 | 1625 | 1630 | 1655 | 1+ | 3 | | | | | 3 | 1622 | 4328 |
| 11 | 0224 | 0234 | 0254U | 1- | 1 | | | | 1 | | 0228 | 4328 |
| 11 | 2156 | 2218 | 2315 | 1- | 1 | | | 1 | | | 2155 | 4335 |
| 11 | 2326 | 2335 | 0058 | 1+ | 3 | 1 | 1 | 1 | | 2 | 2318 | 4336 |
| 12 | 0549 | 0558 | 0650 | 1- | 3 | 1 | | 1 | 1 | | 0549E | 4335 |
| 12 | 1712 | 1720 | 1750 | 1- | 3 | | | 1 | | 6 | 1708 | 4328 |
| 13 | 0626 | 0634 | 0824 | 2 | 3 | | | 1 | 1 | 2 | 0627 | No data |
| 13 | 1327 | 1343 | 1400 | 1- | 1 | | | 1 | | | 1327E | 4335 |
| 13 | 1630 | 1641 | 1710 | 1- | 3 | | | 1 | | 2 | 1628 | 4335 |
| 13 | 2326 | 2336 | 0050 | 1 | 3 | 1 | 1 | 1 | | 1 | 2324 | 4335 |
| 14 | 0108 | 0116 | 0152 | 1- | 3 | | | 1 | | 1 | 0105 | 4328 |
| 14 | 0327 | 0330 | 0354 | 1- | 3 | | | 1 | | 1 | 0327 | 4328 |
| 14 | 0858 | 0915 | 1044 | 2 | 5 | 2 | 1 | 1 | 1 | 3 | 0858E | No data |
| 14 | 1549 | 1610 | 1718 | 1- | 3 | | | 1 | | 6 | 1548 | 4331 |
| 14 | 1728 | 1733 | 1800 | 1- | 1 | | | 1 | | | NF | |
| 14 | 2120 | 2130 | 2145 | 1- | 1 | | | 1 | | | 2117 | X-ray |
| 14 | 2223 | 2224 | 2253 | 1- | 1 | | | 1 | | | 2223 | 4331 |
| 14 | 2338 | 2344 | 0003 | 1- | 1 | | | 1 | | | 2336 | 4335 |

# SUDDEN IONOSPHERIC DISTURBANCES

October 1983

| Day | Start (UT) | Max (UT) | End (UT) | Imp | Wide-spread Index | Number of Station Reports by Type SWF | SEA | SPA | LF-SPA | SES | Known Flare | NOAA/SESC Region |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 0100 | 0114 | 0157 | 1- | 3 | | | 1 | 1 | | 0059 | 4328 |
| 15 | 0312 | 0322 | 0408 | 1- | 3 | | | 1 | 1 | 1 | 0314 | X-ray |
| 15 | 0426 | 0435 | 0558 | 1+ | 3 | 1 | | 1 | 1 | 2 | 0425 | 4328 |
| 15 | 0624 | 0658 | 0749 | 1- | 3 | | | 1 | 1 | 1 | 0610 | 4335 |
| 15 | 0650 | 0652 | 0715 | 1- | 3 | | | | 1 | 1 | 0649 | 4328 |
| 15 | 0838 | 0856 | 0954 | 1- | 3 | | | 1 | 1 | 1 | 0838 | 4335 |
| 15 | 0932 | 0945U | 1019 | 1 | 1 | | 1 | | | | NF | |
| 15 | 1220 | 1302 | 1400 | 1+ | 3 | | | 1 | 1 | 1 | 1218 | X-ray |
| 15 | 1250 | 1301 | 1316 | 1- | 3 | | 1 | 1 | | 4 | NF | |
| 15 | 1443 | 1451 | 1530 | 1- | 3 | | | 1 | | 1 | 1440 | 4335 |
| 15 | 1641 | 1646 | 1709 | 2 | 1 | | 1 | | | | NF | |
| 15 | 2346 | 2354 | 0010. | 1- | 1 | | | 1 | | | 2345 | 4335 |
| 16 | 0127 | 0146 | 0246 | 1- | 3 | 1 | | 1 | 1 | 1 | 0123 | X-ray |
| 16 | 0304 | 0314 | 0337 | 1- | 3 | | | 1 | 1 | | 0305 | 4335 |
| 16 | 0424 | 0429 | 0441 | 1- | 1 | | | | 1 | | 0422 | 4335 |
| 16 | 0847 | 0852 | 0920 | 1 | 3 | 1 | | 1 | 1 | 1 | 0845 | 4340 |
| 16 | 0940 | 0947 | 0955 | 1- | 1 | | | | 1 | | NF | |
| 16 | 1057 | 1105 | 1115 | 1- | 1 | | | | 1 | | 1055 | No data |
| 16 | 1419 | 1427 | 1505 | 1- | 3 | | | 1 | 1 | 4 | 1418 | 4335 |
| 16 | 1701 | 1709 | 1750 | 1- | 3 | | | 1 | | 5 | 1700 | 4335 |
| 16 | 2005 | 2014 | 2127 | 2 | 5 | 1 | | 2 | 1 | 7 | 2004 | X-ray |
| 16 | 2259 | 2306 | 2342 | 1- | 1 | | | 1 | | | 2300 | 4335 |
| 17 | 0016 | 0028 | 0042 | 1- | 3 | 1 | | 1 | | 1 | NF | |
| 17 | 0133 | 0152 | 0220 | 1- | 3 | | | 1 | 1 | | 0128 | 4335 |
| 17 | 0201 | 0205 | 0218 | 1- | 1 | | | | 1 | | 0159 | X-ray |
| 17 | 0220 | 0230 | 0312 | 1- | 3 | 1 | | 1 | 1 | | 0217 | X-ray |
| 17 | 0520 | 0525 | 0550 | 1- | 3 | | | 1 | 1 | | 0519 | 4335 |
| 17 | 0556 | 0600 | 0640 | 1- | 3 | | | 1 | 1 | | 0553 | 4335 |
| 17 | 0912 | 0925 | | 1- | 1 | | | 1 | | 1 | 0911 | X-ray |
| 17 | 0940 | 0948 | 1024 | 1- | 5 | 2 | 3 | 1 | 1 | 3 | 0943 | X-ray |
| 17 | 1118 | 1130 | 1205 | 1- | 3 | | | 1 | 1 | 2 | 1117 | X-ray |
| 17 | 1212 | 1220 | 1240 | 1+ | 5 | 2 | 1 | 1 | 1 | 4 | 1200 | No data |
| 17 | 1543 | 1549 | 1625 | 1- | 3 | | | 1 | | 4 | 1539 | X-ray |
| 17 | 2229 | 2239 | 2254 | 1- | 1 | | | 1 | | | 2228 | X-ray |
| 17 | 2340 | 2344 | 0000 | 1- | 1 | | | 1 | | | 2328 | X-ray |
| 18 | 0145 | 0151 | 0242 | 1- | 3 | 1 | | 1 | 1 | 1 | 0144 | 4335 |
| 18 | 0300 | 0306 | 0331 | 1- | 3 | | | 1 | 1 | | NF | |
| 18 | 0351 | 0400 | 0435 | 1- | 3 | | | 1 | 1 | | 0350 | 4335 |
| 18 | 1000 | 1010 | 1028 | 1- | 1 | | | 1 | | | 1001 | X-ray |
| 18 | 2056 | 2100 | 2124 | 1- | 1 | | | 1 | | | 2054 | X-ray |
| 19 | 0210 | 0214 | 0247 | 1- | 1 | | | 1 | | | 0200 | X-ray |
| 19 | 0631 | 0636 | 0710 | 1- | 3 | | | 1 | 1 | | 0628 | 4335 |
| 19 | 0928 | 0937 | 1041 | 1 | 1 | | 1 | | | | NF | |
| 19 | 1130 | 1146 | 1247 | 1- | 3 | | 2 | 1 | 1 | 1 | 1129 | X-ray |
| 19 | 1427 | 1447 | 1612 | 1 | 3 | | 2 | 1 | 1 | 4 | 1427 | 4335 |
| 19 | 1551 | 1559 | 1625 | 1- | 1 | | | 1 | | 1 | * | |
| 19 | 1754 | 1805 | 1852 | 1 | 3 | | | 1 | | 7 | 1754E | 4335 |
| 19 | 2003 | 2016 | 2124 | 2 | 5 | 3 | | 2 | | 7 | 1957 | X-ray |
| 19 | 2350 | 2355 | 0045 | 1- | 3 | 1 | | 1 | | 1 | 2348 | X-ray |
| 20 | 0126 | 0137 | 0225 | 1- | 3 | | | 1 | 1 | | NF | |
| 20 | 0318 | 0332 | 0403 | 1- | 3 | | | 1 | 1 | | 0316 | X-ray |
| 20 | 0426 | 0434 | 0456 | 1- | 1 | | | 1 | | | 0423 | X-ray |
| 20 | 0458 | 0508 | 0526 | 1- | 1 | | | 1 | | | 0457 | X-ray |
| 20 | 0543 | 0649 | 0550 | 1- | 3 | | | 1 | 1 | | 0539 | X-ray |
| 21 | 2250 | 2253 | 2250 | 1- | 1 | 1 | | | | | NF | |
| 24 | 1850 | 1905 | 1945 | 2 | 3 | | | | | 4 | NF | |
| 25 | 0612 | 0634 | 0717 | 1 | 1 | | 1 | | | | NF | |

# SUDDEN IONOSPHERIC DISTURBANCES

October 1983

| Day | Start (UT) | Max (UT) | End (UT) | Imp | Wide-spread Index | Number of Station Reports by Type SWF | SEA | SPA | LF-SPA | SES | Known Flare | NOAA/SESC Region |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 1615 | 1624 | 1705 | 1- | 1 | | | 1 | | 1 | NF | |
| 25 | 1808 | 1812 | 1820 | 1- | 1 | 1 | | | | | NF | |
| 31 | 1615 | 1617 | 1700 | 1 | 3 | 1 | | | | 3 | 1614 | 4351 |
| 31 | 2120 | 2149 | 2250 | 1- | 3 | 1 | | 1 | | | NF | |

SIDs by NOAA/SESC REGION

October 1983

| Day | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Region Number | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4323 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4324 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4328 | | | | | 2 | | 2 | | 2 | 1 | 1 | 1 | | 2 | 3 | | | | | | | | | | | | | | | | |
| 4331 | | | | | 1 | | | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| 4332 | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4335 | | | | | | | | | 1 | | 1 | 1 | 3 | 1 | 4 | 5 | 3 | 2 | 3 | | | | | | | | | | | | |
| 4336 | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | |
| 4340 | | | | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | |
| 4351 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 |
| X-Ray | 1 | 2 | 1 | | 1 | | | | | | | | | 1 | 2 | 2 | 8 | 2 | 4 | 4 | | | | | | | | | | | |
| No Flare | 1 | 2 | 1 | 4 | | 1 | | 2 | 1 | | | | | 1 | 3 | 1 | 1 | | 1 | 1 | 1 | | | 1 | 3 | | | | | | 1 |
| No Flare Patrol | | | 1 | | | | | | 1 | | | | | | | | | | 1 | | | | | | | | | | | | |
| No Data | | | | | | | | 1 | 1 | 1 | | | 1 | 1 | | 1 | 1 | | | | | | | | | | | | | | |
| Event Totals | 3 | 6 | 3 | 4 | 4 | 1 | 3 | 3 | 6 | 2 | 3 | 2 | 4 | 8 | 12 | 10 | 13 | 4 | 9 | 5 | 1 | | | 1 | 3 | | | | | | 2 |

OBSERVATORIES REPORTING FOR OCTOBER 1983

| | | | |
|---|---|---|---|
| Ayrshire, Scotland (AY) | SES | Maui, Hawaii, USA (MI) | SWF |
| Darmstadt, GFR (DA) | SWF | Panska Ves, Czechoslovakia (PU) | SEA, SWF |
| Farsta, Sweden (FA) | SES | Roswell, New Mexico, USA (RW) | SES |
| Glenorchy, Tasmania, Australia (GN) | SES | San Antonio, Texas, USA (SA) | SES |
| Hiraiso, Japan (HI) | SWF | Sao Paulo (UM) | SPA, SES |
| Hobart, Tasmania, Australia (TA) | SEA | St. Cloud, Minnesota, USA (SC) | SES |
| Huancayo, Peru (HU) | SWF | Tavares, Florida, USA (A49) | SES |
| Inubo, Japan (IN) | SPA | Tournal, Belgium (TB) | SES |
| Juliusruh, GDR (JU) | SWF | Trenton, New Jersey, USA (NJ) | SES |
| Kuhlungsborn, GDR (KU) | SPA, SEA | Upice, Czechoslovakia (UI) | SEA |
| Lake Hiawatha, New Jersey, USA (A32) | SES | Valley Cottage, New York, USA (A1) | SES |
| Lintong, China (LT) | SPA | Vsetin, Czechoslovakia (VS) | SEA |

*Observations are not necessarily continuous for each reporting station.

# SOLAR RADIO EMISSION
# SPECTRAL OBSERVATIONS

OCTOBER 1983

| Day | Observation Start (UT) | Observation End (UT) | Sta | Decimetric Band Start (UT) | Decimetric Band End (UT) | Decimetric Band Int (1-3) | Metric Band Start (UT) | Metric Band End (UT) | Metric Band Int (1-3) | Dekametric Band Start (UT) | Dekametric Band End (UT) | Dekametric Band Int (1-3) | Spectral Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 0000 | 0755 | CULG | | | | 0000.0 | 0751.0 | 2 | | | | IS,C,DC |
| | | | CULG | 0003.0 | 0051.0 | 1 | | | | | | | IN |
| | | | CULG | | | | 0523.5 | 0701.5 | 1 | | | | IIIN |
| | 0557 | 1827 | WEIS | | | | 0813.4 | 0814.7 | 1 | | | | IIIG |
| | | | WEIS | | | | 0818.3 | 0818.5 | 1 | | | | IIIB |
| | | | WEIS | | | | 0834.7 | 0834.8 | 1 | | | | IIIB |
| | | | WEIS | | | | 0923.4 | 0923.6 | 1 | | | | IIIB |
| | | | WEIS | | | | 0947.6 | 0947.7 | 1 | | | | IIIB |
| | | | WEIS | | | | 0949.2 | 0949.4 | 1 | | | | IIIB |
| 02 | | | LEAR | | | | 0007.0 | 0007.1 | 1 | | | | III |
| | | | LEAR | | | | 0105.8 | 0106.3 | 1 | | | | III |
| | 0000 | 0721 | CULG | | | | 0259.5 | 0301.5 | 1 | | | | IIIG |
| | | | CULG | | | | 0306.0 | 0600.0 | 1 | | | | IN |
| | | | LEAR | | | | 0448.0 | 1006.0 | 1 | | | | CONT |
| | | | CULG | | | | 0600.0 | 0721.0 | 1 | | | | IS,C |
| | 0558 | 1030 | WEIS | | | | 0602.0 | 1346.0 | 1 | | | | IIIN |
| | 1049 | 1624 | WEIS | | | | 0620.0 | 1025.0 | 2 | | | | IN |
| | 2021 | 2400 | CULG | | | | | | | | | | |
| | | | LEAR | | | | 2257.8 | 2258.1 | 1 | | | | III |
| 03 | | | LEAR | | | | 0505.8 | 0506.6 | 1 | | | | III |
| | 0000 | 0721 | CULG | | | | 0506.0 | | 2 | | | | IIIB |
| | | | LEAR | | | | 0753.5 | 0753.6 | 1 | | | | III |
| | 0600 | 1624 | WEIS | | | | 0753.6 | 0753.3 | 2 | | | | IIIB |
| | | | LEAR | | | | 0815.3 | 0815.5 | 1 | | | | III |
| | | | WEIS | | | | 0823.2 | 0824.2 | 3 | | | | IIIG |
| | | | LEAR | | | | 0823.3 | 0824.6 | 2 | | | | III |
| | | | LEAR | | | | 0837.8 | 0838.8 | 2 | | | | III |
| | | | WEIS | | | | 0837.9 | 0838.8 | 3 | | | | IIIG |
| | | | WEIS | | | | 0959.9 | 1001.1 | 2 | | | | IIIG |
| | | | WEIS | | | | 1340.9 | 1440.9 | 2 | | | | IIIG |
| | | | WEIS | | | | 1525.9 | 1526.6 | 3 | | | | IIIG |
| | | | SGMR | | | | 1806.3 | 1806.6 | 1 | | | | V |
| | 2021 | 2400 | CULG | 2206.5 | 2257.5 | 1 | | | | | | | IS |
| | | | LEAR | | | | 2257.8 | 2258.1 | 1 | | | | III |
| 04 | | | LEAR | | | | 0346.3 | 0346.8 | 1 | | | | III |
| | 0000 | 0720 | CULG | | | | 0346.5 | | 3 | | | | IIIG |
| | | | CULG | | | | 0420.5 | | 2 | | | | IIIB |
| | | | LEAR | | | | 0420.8 | 0421.0 | 1 | | | | III |
| | | | CULG | 0535.0 | 0642.0 | 1 | | | | | | | IS |
| | 0700 | 1019 | WEIS | | | | | | | | | | |
| | 1024 | 1622 | WEIS | | | | | | | | | | |
| | 2021 | 2400 | CULG | 2021.0 | 2400.0 | 1 | | | | | | | IN |
| | | | CULG | | | | 2333.5 | 2347.6 | 1 | | | | IN |
| 05 | 0000 | 0720 | CULG | | | | 0005.5 | 0007.5 | 3 | | | | IIIG |
| | | | LEAR | | | | 0005.6 | 0009.1 | 2 | | | | III |
| | | | PALE | | | | 0005.6 | 0006.8 | 2 | | | | III |
| | | | LEAR | | | | 0011.8 | 0012.8 | 1 | | | | III |
| | | | CULG | | | | 0208.5 | | 1 | | | | IIIB |
| | | | CULG | | | | 0247.0 | 0253.0 | 3 | 0251.5 | 0253.2 | 2 | IIIG,N |
| | | | LEAR | | | | 0247.1 | 0253.0 | 2 | | | | III |
| | | | PALE | | | | 0247.1 | 0249.0 | 1 | | | | III |
| | | | PALE | | | | 0251.3 | 0252.8 | 2 | | | | V |
| | | | CULG | | | | 0311.0 | 0543.5 | 1 | | | | IIIN |
| | | | LEAR | | | | 0312.8 | 0313.1 | 1 | | | | III |
| | | | LEAR | | | | 0327.8 | 0328.1 | 1 | | | | III |
| | | | CULG | | | | 0328.0 | | 2 | | | | IIIB |
| | | | CULG | 0417.5 | 0534.0 | 1 | | | | | | | IS |
| | | | LEAR | | | | 0543.6 | 0543.8 | 1 | | | | III |
| | | | CULG | 0712.5 | 0713.0 | 2 | 0712.5 | 0714.0 | 3 | 0712.5 | 0714.0 | 2 | IIIG,V |
| | | | LEAR | | | | 0712.6 | 0714.5 | 3 | | | | III |
| | | | WEIS | | | | 0748.0 | 1418.0 | 2 | | | | IN,DC |
| | 0743 | 1622 | WEIS | | | | 1040.6 | 1041.7 | 3 | | | | DCIM |
| | | | WEIS | | | | 1041.3 | 1042.4 | 2 | | | | IIIG |
| | | | WEIS | | | | 1109.3 | 1111.4 | 3 | | | | IIIG |
| | | | WEIS | | | | 1256.6 | 1257.1 | 3 | | | | IIIG |
| | | | WEIS | | | | 1356.8 | 1457.1 | 3 | | | | IIIG |
| | | | SGMR | | | | 1400.8 | 1401.5 | 1 | | | | V |

# SOLAR RADIO EMISSION
# SPECTRAL OBSERVATIONS

OCTOBER 1983

| Day | Observation Start (UT) | Observation End (UT) | Sta | Decimetric Band Start (UT) | Decimetric Band End (UT) | Decimetric Band Int (1-3) | Metric Band Start (UT) | Metric Band End (UT) | Metric Band Int (1-3) | Dekametric Band Start (UT) | Dekametric Band End (UT) | Dekametric Band Int (1-3) | Spectral Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 05 | | | WEIS | | | | 1401.8 | 1402.1 | 1 | | | | IIIB |
| | | | WEIS | | | | 1406.2 | 1406.4 | 2 | | | | IIIB |
| | | | SGMR | | | | 1738.3 | 1739.0 | 1 | | | | V |
| | | | SGMR | | | | 1818.0 | 1832.6 | 1 | | | | GG |
| | | | PALE | | | | 1825.6 | 1839.6 | 2 | | | | GG |
| | | | SGMR | | | | 1826.0 | 1826.5 | 2 | | | | V |
| | 2020 | 2400 | CULG | 2130.0 | 2340.0 | 1 | | | | | | | IS |
| | | | CULG | | | | 2143.0 | 2202.0 | 3 | | | | IIIG,N |
| | | | CULG | | | | 2147.5 | 2400.0 | 1 | | | | IN |
| | | | CULG | | | | 2250.5 | 2329.0 | 1 | | | | IIIN |
| | | | LEAR | | | | 2300.6 | 2302.0 | 1 | | | | III |
| | | | PALE | | | | 2300.6 | 2300.8 | 1 | | | | III |
| | | | CULG | | | | 2301.0 | | 2 | | | | IIIB |
| | | | LEAR | | | | 2315.5 | 2315.6 | 1 | | | | III |
| | | | LEAR | | | | 2328.8 | 2329.3 | 1 | | | | III |
| 06 | 0000 | 0720 | CULG | | | | 0000.0 | 0029.5 | 1 | | | | IS |
| | | | LEAR | | | | 0009.0 | 0009.3 | 1 | | | | III |
| | | | CULG | | | | 0116.0 | 0510.5 | 1 | | | | IIIN |
| | | | LEAR | | | | 0250.6 | 0251.1 | 1 | | | | III |
| | | | CULG | | | | 0303.5 | 0304.5 | 2 | | | | IIIG,U |
| | | | LEAR | | | | 0754.3 | 0754.6 | 1 | | | | III |
| | 0601 | 1149 | WEIS | | | | 1142.2 | 1142.4 | 2 | | | | IIIG |
| | 1153 | 1620 | WEIS | | | | 1333.3 | 1333.7 | 3 | | | | IIIG |
| | 2020 | 2400 | CULG | 2056.0 | 2056.5 | 1 | | | | | | | DCIM |
| | | | CULG | 2056.5 | 2225.5 | 1 | | | | | | | IN |
| | | | CULG | | | | 2204.5 | 2205.5 | 1 | | | | IIIG,U |
| 07 | 0000 | 0720 | CULG | | | | 0133.5 | | 1 | | | | IIIB |
| | | | CULG | | | | 0344.5 | | 2 | | | | IIIG |
| | | | CULG | | | | 0546.5 | 0547.5 | 3 | | | | IIIG |
| | | | LEAR | | | | 0546.6 | 0549.6 | 1 | | | | III |
| | | | CULG | | | | 0548.0 | 0645.5 | 2 | | | | IIIG,N |
| | | | LEAR | | | | 0616.6 | 0621.6 | 1 | | | | III |
| | 0603 | 1618 | WEIS | | | | 0616.8 | 0617.2 | 3 | | | | IIIG |
| | | | WEIS | | | | 0621.2 | 0621.4 | 3 | | | | IIIG |
| | | | WEIS | | | | 0645.3 | 0645.6 | 2 | | | | IIIG |
| | | | WEIS | | | | 0721.4 | 0723.1 | 3 | | | | IIIG |
| | | | WEIS | | | | 0721.7 | 0726.9 | 3 | | | | I |
| | | | LEAR | | | | 0721.8 | 0727.1 | 1 | | | | III |
| | | | WEIS | | | | 0726.7 | 0727.8 | 2 | | | | IIIG |
| | | | LEAR | | | | 0738.3 | 0738.6 | 1 | | | | III |
| | | | WEIS | | | | 0738.3 | 0738.7 | 3 | | | | IIIG |
| | | | WEIS | | | | 0948.6 | 0951.4 | 3 | | | | IIIG |
| | | | LEAR | | | | 0949.1 | 0949.5 | 1 | | | | III |
| | | | WEIS | | | | 0949.2 | 0950.7 | 2 | | | | DCIM |
| | | | WEIS | | | | 1027.7 | 1028.3 | 3 | | | | IIIG |
| | | | WEIS | | | | 1105.3 | 1105.6 | 3 | | | | IIIG |
| | | | WEIS | | | | 1141.8 | 1142.0 | 2 | | | | IIIG |
| | | | WEIS | | | | 1148.8 | 1149.4 | 2 | | | | IIIG |
| | | | SGMR | | | | 1209.3 | 1213.3 | 1 | | | | V |
| | | | WEIS | | | | 1209.3 | 1210.4 | 3 | | | | IIIG |
| | | | WEIS | | | | 1212.7 | 1213.9 | 3 | | | | IIIG |
| | | | WEIS | | | | 1215.9 | 1217.8 | 3 | | | | IIIGG |
| | | | WEIS | | | | 1224.6 | 1224.7 | 1 | | | | IIIB |
| | | | WEIS | | | | 1250.2 | 1250.7 | 3 | | | | IIIG |
| | | | WEIS | | | | 1252.0 | 1252.2 | 3 | | | | IIIG |
| | | | WEIS | | | | 1255.0 | 1255.4 | 2 | | | | IIIG |
| | | | WEIS | | | | 1257.4 | 1257.6 | 1 | | | | IIIB |
| | | | WEIS | | | | 1259.1 | 1259.6 | 2 | | | | IIIG |
| | | | WEIS | | | | 1302.8 | 1303.0 | 3 | | | | IIIG |
| | | | WEIS | | | | 1342.3 | 1343.6 | 2 | | | | IIIG |
| | | | WEIS | | | | 1351.7 | 1352.1 | 3 | | | | IIIG |
| | | | SGMR | | | | 1351.8 | 1352.0 | 1 | | | | III |
| | | | WEIS | | | | 1405.3 | 1406.6 | 3 | | | | IIIG |
| | | | WEIS | | | | 1416.7 | 1417.3 | 2 | | | | IIIG |
| | | | WEIS | | | | 1435.3 | 1436.9 | 3 | | | | IIIGG |
| | | | SGMR | | | | 1442.6 | 1446.6 | 1 | | | | V |
| | | | WEIS | | | | 1442.6 | 1443.7 | 3 | | | | IIIG |
| | | | WEIS | | | | 1445.7 | 1446.7 | 3 | | | | IIIGG |
| | | | WEIS | | | | 1518.6 | 1518.7 | 1 | | | | IIIB |

# SOLAR RADIO EMISSION
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| Observation Start (UT) | Observation End (UT) | Sta | Decimetric Band Start (UT) | Decimetric Band End (UT) | Decimetric Band Int (1-3) | Metric Band Start (UT) | Metric Band End (UT) | Metric Band Int (1-3) | Dekametric Band Start (UT) | Dekametric Band End (UT) | Dekametric Band Int (1-3) | Spectral Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 07 | | WEIS | | | | 1555.3 | 1556.9 | 3 | | | | IIIG,U |
| | | WEIS | | | | 1555.3 | 1557.3 | 2 | | | | DCIM |
| | | WEIS | | | | 1558.4 | 1559.2 | 3 | | | | IIIG,U |
| | | WEIS | | | | 1600.7 | 1600.9 | 3 | | | | IIIB,U |
| | | WEIS | | | | 1602.2 | 1603.3 | 2 | | | | IIIG |
| | | PALE | | | | 1718.8 | 1720.8 | 2 | | | | III |
| | | SGMR | | | | 1918.1 | 1921.0 | 1 | | | | V |
| | | PALE | | | | 1928.8 | 1928.8 | 1 | | | | III |
| | | PALE | | | | 1959.6 | 1959.8 | 1 | | | | III |
| | | SGMR | | | | 1959.8 | 1959.8 | 1 | | | | III |
| | | CULG | | | | 2022.5 | 2358.0 | 2 | | | | IIIN |
| | 2020 | 2400 CULG | 2025.0 | 2215.0 | 1 | 2020.0 | 2313.0 | 1 | | | | IS,C |
| | | CULG | | | | 2035.5 | 2356.0 | 1 | | | | IIIN |
| | | CULG | | | | 2054.0 | 2055.0 | 3 | 2054.0 | 2055.0 | 1 | IIIG |
| | | PALE | | | | 2054.1 | 2055.0 | 2 | | | | III |
| | | SGMR | | | | 2054.1 | 2054.3 | 1 | | | | III |
| | | SGMR | | | | 2054.6 | 2054.8 | 1 | | | | III |
| | | PALE | | | | 2102.8 | 2102.8 | 2 | | | | III |
| | | CULG | | | | 2103.0 | | 3 | | | | IIIB |
| | | LEAR | | | | 2303.1 | 2305.3 | 2 | | | | III |
| | | PALE | | | | 2303.3 | 2305.0 | 3 | | | | V |
| | | CULG | 2304.0 | 2304.5 | 2 | 2303.0 | 2305.0 | 3 | 2304.0 | 2305.5 | 2 | IIIG,V,U |
| | | LEAR | | | | 2313.3 | 2316.8 | 1 | | | | III |
| | | LEAR | | | | 2329.6 | 2331.0 | 1 | | | | III |
| | | LEAR | | | | 2355.1 | 2359.1 | 1 | | | | III |
| 08 | 0000 | 0719 CULG | 0008.0 | | 1 | 0008.0 | | 2 | | | | IIIB |
| | | LEAR | | | | 0008.0 | 0008.3 | 2 | | | | III |
| | | CULG | | | | 0011.5 | 0632.0 | 1 | | | | IIIN |
| | | LEAR | | | | 0017.1 | 0048.1 | 1 | | | | G |
| | | CULG | 0017.5 | 0018.5 | 1 | 0016.0 | 0025.5 | 2 | | | | IIIS |
| | | LEAR | | | | 0023.8 | 0025.8 | 2 | | | | V |
| | | CULG | 0025.0 | 0035.0 | 1 | | | | | | | IS |
| | | CULG | | | | 0037.0 | 0037.5 | 2 | | | | IIIB,U |
| | | LEAR | | | | 0136.3 | 0140.6 | 2 | | | | III |
| | | CULG | | | | 0139.0 | 0140.0 | 3 | 0139.0 | 0140.0 | 1 | IIIG,U |
| | | PALE | | | | 0139.1 | 0139.8 | 2 | | | | V |
| | | LEAR | | | | 0145.1 | 0148.1 | 3 | | | | V |
| | | PALE | | | | 0145.1 | 0147.3 | 3 | | | | V |
| | | CULG | 0145.5 | 0146.0 | 1 | 0145.0 | 0148.0 | 3 | 0146.0 | 0148.0 | 3 | IIIG,V |
| | | LEAR | | | | 0206.3 | 0206.6 | 1 | | | | III |
| | | LEAR | | | | 0300.1 | 0300.3 | 1 | | | | III |
| | | LEAR | | | | 0316.8 | 0316.8 | 1 | | | | III |
| | | CULG | | | | 0407.5 | 0542.0 | 1 | | | | IS,C |
| | | LEAR | | | | 0445.0 | 0448.0 | 3 | | | | III |
| | | CULG | 0445.5 | 0446.0 | 2 | 0445.0 | 0448.0 | 3 | 0446.0 | 0448.0 | 3 | IIIG,V |
| | | LEAR | | | | 0510.6 | 0511.0 | 1 | | | | III |
| | | CULG | | | | 0511.0 | | 3 | | | | IIIB |
| | | CULG | 0544.5 | 0545.0 | 1 | 0544.5 | 0545.5 | 1 | | | | IIIG |
| | 0603 | 1127 WEIS | | | | 0627.4 | 0627.8 | 3 | | | | DCIM |
| | | CULG | 0627.5 | 0628.0 | 3 | 0627.5 | 0628.0 | 3 | | | | IIIG |
| | | WEIS | | | | 0631.8 | 0631.9 | 1 | | | | IIIB |
| | | WEIS | | | | 0635.4 | 0636.2 | 3 | | | | IIIG |
| | | LEAR | | | | 0635.8 | 0644.1 | 1 | | | | III |
| | | CULG | 0636.0 | | 2 | 0636.0 | | 2 | | | | IIIB,U |
| | | CULG | 0643.0 | 0652.0 | 1 | | | | | | | IS |
| | | WEIS | | | | 0648.0 | 0652.0 | 1 | | | | I |
| | | WEIS | | | | 0708.7 | 0708.9 | 2 | | | | IIIG |
| | | CULG | | | | 0709.0 | | 2 | | | | IIIB |
| | | WEIS | | | | 0733.3 | 0739.3 | 3 | | | | IIIGG |
| | | WEIS | | | | 0803.9 | 0807.3 | 3 | | | | IIIGG |
| | | LEAR | | | | 0804.6 | 0807.0 | 1 | | | | III |
| | | WEIS | | | | 0841.4 | 0841.7 | 2 | | | | IIIG,RS |
| | | LEAR | | | | 0857.8 | 0900.0 | 2 | | | | III |
| | | WEIS | | | | 0858.7 | 0859.9 | 3 | | | | IIIGG |
| | | LEAR | | | | 0906.1 | 0906.3 | 1 | | | | III |
| | | WEIS | | | | 0906.2 | 0906.4 | 2 | | | | IIIG |
| | | WEIS | | | | 0912.2 | 0913.3 | 1 | | | | IIIG |
| | | LEAR | | | | 0928.8 | 0929.1 | 1 | | | | III |
| | | WEIS | | | | 0928.8 | 0929.1 | 3 | | | | IIIG |
| | | WEIS | | | | 1010.3 | 1011.7 | 3 | | | | IIIG |

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| Day | Observation Start (UT) | Observation End (UT) | Sta | Decimetric Band Start (UT) | Decimetric Band End (UT) | Decimetric Band Int (1-3) | Metric Band Start (UT) | Metric Band End (UT) | Metric Band Int (1-3) | Dekametric Band Start (UT) | Dekametric Band End (UT) | Dekametric Band Int (1-3) | Spectral Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 08 | | | WEIS | | | | 1032.6 | 1032.8 | 2 | | | | IIIG |
| | | | WEIS | | | | 1039.3 | 1039.4 | 2 | | | | IIIB |
| | | | WEIS | | | | 1053.7 | 1053.8 | 3 | | | | IIIG |
| | 1152 | 1616 | WEIS | | | | 1213.6 | 1213.8 | 2 | | | | IIIB |
| | | | WEIS | | | | 1219.4 | 1219.6 | 1 | | | | IIIB |
| | | | WEIS | | | | 1240.6 | 1240.8 | 1 | | | | IIIB |
| | | | WEIS | | | | 1450.2 | 1450.3 | 2 | | | | IIIB |
| | | | WEIS | | | | 1454.0 | 1454.6 | 1 | | | | IIIG |
| | | | WEIS | | | | 1506.5 | 1506.6 | 1 | | | | IIIB |
| | | | SGMR | | | | 1649.5 | 1653.1 | 1 | | | | V |
| | | | PALE | | | | 1649.6 | 1659.3 | 2 | | | | III |
| | | | SGMR | | | | 1657.1 | 1659.8 | 2 | | | | V |
| | | | PALE | | | | 1704.5 | 1705.8 | 3 | | | | V |
| | | | SGMR | | | | 1704.5 | 1705.8 | 3 | | | | V |
| | | | SGMR | | | | 1713.8 | 1714.6 | 1 | | | | V |
| | | | PALE | | | | 1714.0 | 1714.1 | 2 | | | | III |
| | | | PALE | | | | 2002.1 | 2002.3 | 2 | | | | III |
| | | | SGMR | | | | 2002.1 | 2002.3 | 1 | | | | III |
| | 2020 | 2400 | CULG | | | | 2020.0 | 2400.0 | 1 | | | | IS,C,DC |
| | | | CULG | | | | 2037.0 | 2222.0 | 1 | | | | IIIN |
| | | | SGMR | | | | 2048.6 | 2049.1 | 1 | | | | V |
| | | | CULG | 2049.5 | 2050.0 | 1 | 2048.5 | 2050.0 | 2 | 2048.5 | 2049.0 | 2 | IIIG |
| | | | CULG | | | | 2054.0 | 2219.0 | 2 | | | | IIIN |
| | | | CULG | 2203.5 | 2228.0 | 1 | | | | | | | IS |
| | | | CULG | | | | 2211.0 | 2212.0 | 3 | | | | IIIG |
| | | | CULG | 2356.5 | 2358.0 | 2 | 2356.5 | 2359.5 | 3 | 2356.5 | 2359.5 | 3 | IIIGG,U,V |
| | | | LEAR | | | | 2356.6 | 0002.6 | 3 | | | | V |
| | | | PALE | | | | 2356.6 | 2359.1 | 3 | | | | V |
| 09 | 0000 | 0719 | CULG | | | | 0000.0 | 0719.5D | 1 | | | | IS,C,DC |
| | | | LEAR | | | | 0030.6 | 0030.8 | 1 | | | | III |
| | | | LEAR | | | | 0035.3 | 0036.8 | 2 | | | | III |
| | | | CULG | | | | 0036.5 | 0037.5 | 3 | 0036.5 | 0037.0 | 2 | IIIG |
| | | | PALE | | | | 0036.5 | 0036.8 | 2 | | | | III |
| | | | LEAR | | | | 0113.3 | 0118.3 | 1 | | | | III |
| | | | CULG | | | | 0114.0 | 0704.5 | 1 | | | | IIIN |
| | | | CULG | | | | 0142.5 | 0145.0 | 1 | | | | IIIG |
| | | | CULG | | | | 0206.5 | 0208.0 | 2 | | | | IIIG,V |
| | | | PALE | | | | 0207.3 | 0208.0 | 1 | | | | III |
| | | | CULG | | | | 0212.5 | 0215.0 | 3 | 0212.5 | 0215.0 | 3 | IIIGG,U |
| | | | PALE | | | | 0212.6 | 0216.1 | 2 | | | | III |
| | | | CULG | | | | 0215.5 | 0226.0 | 2 | | | II | H |
| | | | LEAR | | | | 0222.6 | 0237.3 | 1 | | | II | |
| | | | LEAR | | | | 0248.3 | 0252.6 | 1 | | | | III |
| | | | LEAR | | | | 0405.6 | 0406.1 | 1 | | | | III |
| | | | CULG | | | | 0406.0 | 0622.0 | 2 | | | | IIIN |
| | | | LEAR | | | | 0423.8 | 0425.3 | 1 | | | | III |
| | | | LEAR | | | | 0458.8 | 0505.6 | 1 | | | | III |
| | | | LEAR | | | | 0521.3 | 0522.6 | 3 | | | | III |
| | | | CULG | 0521.5 | 0548.0 | 2 | 0521.5 | 0548.0 | 3 | | | | IIIG,N |
| | | | CULG | 0522.0 | 0547.0 | 2 | | | | | | | IIIS |
| | | | LEAR | | | | 0528.6 | 0533.1 | 2 | | | | V |
| | | | LEAR | | | | 0538.1 | 0548.1 | 2 | | | | III |
| | | | CULG | 0548.5 | 0549.5 | 2 | | | | | | | IS |
| | | | LEAR | | | | 0556.0 | 0605.1 | 1 | | | | III |
| | 0606 | 1614 | WEIS | | | | 0620.0 | 0655.0 | 1 | | | | I |
| | | | LEAR | | | | 0621.0 | 0622.1 | 1 | | | | III |
| | | | WEIS | | | | 0621.1 | 0622.3 | 3 | | | | IIIG |
| | | | LEAR | | | | 0627.0 | 0828.0 | 1 | | | | CONT |
| | | | LEAR | | | | 0730.0 | 0747.0 | 2 | | | | G |
| | | | WEIS | | | | 0731.1 | 0731.2 | 1 | | | | IIIB |
| | | | WEIS | 0733.9 | 0740.4 | 3 | | | | | | | IIIGG |
| | | | WEIS | | | | 0746.7 | 0746.9 | 2 | | | | IIIG |
| | | | WEIS | | | | 0822.2 | 0822.4 | 2 | | | | DCIM |
| | | | WEIS | | | | 0822.3 | 0826.0 | 3 | | | | IIIGG |
| | | | LEAR | | | | 0836.6 | 0838.8 | 2 | | | | III |
| | | | WEIS | | | | 0836.6 | 0836.9 | 3 | | | | IIIG |
| | | | WEIS | | | | 0838.7 | 0838.9 | 3 | | | | IIIG |
| | | | WEIS | | | | 0845.6 | 0845.7 | 1 | | | | IIIB |
| | | | LEAR | | | | 0848.1 | 0848.3 | 1 | | | | III |
| | | | WEIS | | | | 0848.3 | 0848.5 | 2 | | | | IIIB |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 09 | | | WEIS | | | | 0850.6 | 0850.9 | 2 | | | | IIIB |
| | | | LEAR | | | | 0853.0 | 0859.3 | 3 | | | | III |
| | | | WEIS | | | | 0853.2 | 0859.4 | 3 | | | | IIIGG |
| | | | WEIS | | | | 0938.5 | 0942.1 | 1 | | | | IIIG |
| | | | WEIS | | | | 0953.2 | 0958.8 | 3 | | | | IIIGG |
| | | | WEIS | | | | 0958.2 | 0958.9 | 3 | | | | IIIG |
| | | | WEIS | | | | 1000.9 | 1001.6 | 2 | | | | IIIG |
| | | | WEIS | | | | 1010.0 | 1114.0 | 2 | | | | I |
| | | | WEIS | | | | 1024.0 | 1024.4 | 2 | | | | IIIG |
| | | | WEIS | | | | 1026.4 | 1027.6 | 1 | | | | IIIG |
| | | | WEIS | | | | 1029.0 | 1034.3 | 3 | | | | IIIGG |
| | | | WEIS | | | | 1036.1 | 1039.9 | 3 | | | | IIIGG |
| | | | WEIS | | | | 1107.6 | 1107.8 | 2 | | | | IIIG |
| | | | WEIS | | | | 1122.6 | 1125.3 | 2 | | | | IIIG |
| | | | WEIS | | | | 1128.3 | 1128.9 | 3 | | | | IIIG |
| | | | WEIS | | | | 1130.8 | 1131.0 | 2 | | | | IIIB |
| | | | WEIS | | | | 1138.6 | 1145.7 | 3 | | | | IIIGG/V |
| | | | SGMR | | | | 1140.8 | 1143.6 | 2 | | | | V |
| | | | WEIS | | | | 1150.4 | 1152.2 | 3 | | | | IIIG |
| | | | SGMR | | | | 1151.8 | 1152.0 | 1 | | | | III |
| | | | WEIS | | | | 1224.6 | 1224.8 | 2 | | | | IIIG |
| | | | WEIS | | | | 1229.7 | 1229.9 | 2 | | | | IIIB |
| | | | WEIS | | | | 1254.9 | 1255.0 | 2 | | | | IIIB |
| | | | WEIS | | | | 1310.3 | 1310.4 | 2 | | | | IIIB |
| | | | WEIS | | | | 1336.6 | 1336.7 | 1 | | | | IIIB |
| | | | WEIS | | | | 1344.0 | 1344.1 | 1 | | | | IIIB |
| | | | WEIS | | | | 1408.7 | 1408.9 | 1 | | | | IIIB |
| | | | WEIS | | | | 1438.2 | 1438.3 | 1 | | | | IIIB |
| | | | WEIS | | | | 1441.2 | 1441.3 | 1 | | | | IIIB |
| | | | WEIS | | | | 1444.3 | 1446.1 | 2 | | | | IIIG |
| | | | WEIS | | | | 1453.3 | 1453.7 | 2 | | | | IIIB |
| | | | WEIS | | | | 1459.2 | 1459.4 | 2 | | | | IIIB |
| | | | WEIS | | | | 1504.8 | 1504.9 | 2 | | | | IIIB |
| | | | WEIS | | | | 1523.6 | 1524.3 | 2 | | | | IIIG |
| | 2020 | 2400 | CULG | 2020.0E | 2249.5D | 1 | | | | | | | IS |
| | | | CULG | | | | 2037.5 | | 2 | | | | IIIB |
| | | | LEAR | | | | 2343.0 | 0300.0 | 1 | | | | CONT |
| | | | LEAR | | | | 2345.6 | 2351.3 | 1 | | | | III |
| | | | LEAR | | | | 2356.6 | 0002.6 | 3 | | | | V |
| 10 | | | LEAR | | | | 0043.8 | 0044.6 | 1 | | | | III |
| | 0100 | 0719 | CULG | 0108.0 | 0703.5 | 1 | | | | | | | IN |
| | | | CULG | | | | 0138.5 | 0300.0 | 1 | | | | IN |
| | | | CULG | | | | 0300.0 | 0510.0 | 1 | | | | IS,DC |
| | | | CULG | | | | 0510.0 | 0717.0 | 1 | | | | IN |
| | | | LEAR | | | | 0541.0 | 0815.0 | 1 | | | | CONT |
| | | | WEIS | | | | 0649.8 | 0650.0 | 1 | | | | IIIB |
| | | | CULG | | | | 0659.0 | 0700.0 | 2 | | | | IIIG |
| | 0608 | 1147 | WEIS | | | | 0659.1 | 0659.7 | 2 | | | | IIIG |
| | | | CULG | | | | 0703.0 | 0709.0 | | | | | IIIS,W |
| | | | WEIS | | | | 0751.8 | 0751.9 | 1 | | | | IIIB |
| | | | WEIS | | | | 1012.6 | 1012.8 | 1 | | | | IIIB |
| | 1151 | 1612 | WEIS | | | | 1346.9 | 1347.0 | 1 | | | | IIIB |
| | | | WEIS | | | | 1412.0 | 1412.1 | 1 | | | | IIIB |
| | 2020 | 2400 | CULG | | | | 2030.5 | 2040.5 | 3 | | | | IIIN |
| | | | CULG | 2045.0 | 2110.0 | 1 | | | | | | | IS |
| | | | CULG | 2135.0 | 2137.0 | 2 | 2136.5 | 2137.0 | 2 | | | | IIIG |
| | | | CULG | | | | 2139.5 | 2140.0 | 1 | | | | IIIG |
| | | | CULG | | | | 2214.0 | | 1 | | | | IIIB |
| | | | LEAR | | | | 2236.8 | 2340.6 | 1 | | | | III |
| | | | CULG | 2240.5 | 2243.5 | 1 | | | | | | | IIIG |
| | | | CULG | | | | 2337.5 | 2340.5 | 1 | | | | IIIN |
| | | | LEAR | | | | 2359.3 | 0239.0 | 1 | | | | CONT |
| 11 | 0000 | 0719 | CULG | | | | 0039.0 | 0040.0 | 2 | | | | IIIG |
| | | | PALE | | | | 0041.1 | 0041.3 | 1 | | | | III |
| | | | LEAR | | | | 0041.8 | 0043.0 | 2 | | | | III |
| | | | CULG | 0042.0 | 0042.5 | 2 | 0042.0 | 0042.5 | 2 | 0042.0 | 0042.5 | 1 | IIIG |
| | | | CULG | | | | 0222.0 | 0226.5 | 1 | | | | IIIN |
| | | | CULG | | | | 0315.0 | 0316.5 | 2 | 0315.5 | 0317.0 | 1 | IIIGG |
| | | | LEAR | | | | 0315.0 | 0318.1 | 1 | | | | V |

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| Day | Observation Start (UT) | Observation End (UT) | Sta | Decimetric Band Start (UT) | Decimetric Band End (UT) | Decimetric Band Int (1-3) | Metric Band Start (UT) | Metric Band End (UT) | Metric Band Int (1-3) | Dekametric Band Start (UT) | Dekametric Band End (UT) | Dekametric Band Int (1-3) | Spectral Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | | | LEAR | | | | 0413.5 | 0416.1 | 2 | | | | V |
| | | | CULG | 0414.0 | | 1 | 0414.0 | 0416.0 | 3 | 0414.5 | 0416.0 | 2 | IIIG,U,V |
| | 0609 | 1410 | WEIS | | | | 1145.4 | 1155.6 | 3 | | | | IIIB |
| | | | WEIS | | | | 1404.3 | 1404.7 | 3 | | | | IIIG |
| | | | SGMR | | | | 1439.1 | 1439.5 | 1 | | | | V |
| | 1443 | 1608 | WEIS | | | | | | | | | | |
| | | | PALE | | | | 1822.3 | 1822.6 | 1 | | | | III |
| | | | SGMR | | | | 1822.3 | 1822.6 | 1 | | | | V |
| | 2019 | 2400 | CULG | | | | 2019.0 | 2400.0 | 1 | | | | IS,DC |
| | | | CULG | 2022.0 | 2152.0 | 1 | | | | | | | IN |
| | | | PALE | | | | 2031.3 | 2032.6 | 1 | | | | V |
| | | | LEAR | | | | 2236.8 | 2340.6 | 1 | | | | III |
| | | | CULG | 2324.5 | 2325.0 | 1 | 2324.5 | | 1 | | | | IIIG |
| 12 | 0000 | 0718 | CULG | | | | 0000.0 | 0606.0 | 1 | | | | IS,DC |
| | | | LEAR | | | | 0036.5 | 0036.6 | 1 | | | | III |
| | | | LEAR | | | | 0042.0 | 0205.0 | 1 | | | | CONT |
| | | | LEAR | | | | 0201.1 | 0201.8 | 1 | | | | V |
| | | | CULG | | | | 0201.5 | | 1 | 0201.5 | | 1 | IIIB,U |
| | | | LEAR | | | | 0240.1 | 0245.1 | 1 | | | | III |
| | | | CULG | | | | 0240.5 | | 1 | 0240.5 | | 1 | IIIB |
| | | | LEAR | | | | 0332.5 | 0339.6 | 1 | | | | III |
| | | | CULG | | | | 0606.0 | 0633.0 | 1 | | | | IN |
| | | | LEAR | | | | 0703.8 | 0704.1 | 1 | | | | III |
| | | | CULG | 0704.0 | | 1 | 0704.0 | 0704.5 | 3 | | | | IIIG,U |
| | 0713 | 1139 | WEIS | | | | 0756.6 | 0757.3 | 3 | | | | IIIG |
| | | | LEAR | | | | 0756.8 | 0757.1 | 2 | | | | III |
| | 1144 | 1436 | WEIS | | | | 1232.7 | 1232.9 | 1 | | | | IIIB |
| | 2019 | 2400 | CULG | | | | | | | | | | |
| 13 | 0000 | 0718 | CULG | | | | | | | | | | |
| | 0614 | 1604 | WEIS | | | | 1320.1 | 1320.3 | 1 | | | | IIIG |
| | 2019 | 2400 | CULG | | | | 2335.0 | 2335.5 | 1 | 2335.0 | 2335.5 | 1 | IIIB,V |
| | | | LEAR | | | | 2335.0 | 2335.8 | 1 | | | | III |
| | | | CULG | | | | 2350.5 | | 1 | | | | IIIG |
| | | | LEAR | | | | 2350.5 | 2351.0 | 1 | | | | III |
| 14 | | | LEAR | | | | 0031.3 | 0032.0 | 1 | | | | III |
| | | | LEAR | | | | 0240.8 | 0242.6 | 1 | | | | III |
| | 0000 | 0718 | CULG | | | | 0300.5 | 0301.0 | 2 | | | | IIIG |
| | | | LEAR | | | | 0307.1 | 0307.3 | 1 | | | | III |
| | | | CULG | | | | 0415.5 | 0416.5 | 3 | 0415.5 | 0416.5 | 1 | IIIGG |
| | | | LEAR | | | | 0415.5 | 0416.3 | 3 | | | | |
| | | | LEAR | | | | 0538.8 | 0540.5 | 2 | | | | III |
| | | | CULG | | | | 0539.0 | 0540.0 | 2 | | | | IIIG |
| | | | LEAR | | | | 0551.6 | 0553.1 | 1 | | | | III |
| | | | CULG | | | | 0553.0 | | 1 | | | | IIIB |
| | | | LEAR | | | | 0853.5 | 0853.8 | 1 | | | | III |
| | 0614 | 0929 | WEIS | | | | 0853.6 | 0853.7 | 2 | | | | IIIB |
| | | | LEAR | | | | 0918.0 | 0919.6 | 1 | | | | III |
| | 1016 | 1145 | WEIS | | | | | | | | | | |
| | 1242 | 1530 | WEIS | | | | 1243.1 | 1243.2 | 1 | | | | IIIB |
| | | | SGMR | | | | 1824.6 | 1824.6 | 1 | | | | III |
| | | | SGMR | | | | 1847.6 | 1852.3 | 1 | | | | V |
| | | | PALE | | | | 1951.3 | 1953.0 | 2 | | | | III |
| | | | SGMR | | | | 1951.3 | 1958.1 | 1 | | | | V |
| | | | PALE | | | | 1955.6 | 1958.1 | 2 | | | | V |
| | 2018 | 2400 | CULG | 2022.0 | 2336.5 | 1 | | | | | | | IS |
| | | | CULG | | | | 2034.0 | 2400.0 | 1 | | | | IN |
| | | | CULG | 2106.5 | 2107.0 | 2 | 2104.0 | 2107.5 | 2 | | | | IIIS |
| | | | CULG | | | | 2309.0 | 2312.0 | 2 | | | | IIIS |
| | | | LEAR | | | | 2309.6 | 2312.1 | 1 | | | | III |
| | | | CULG | | | | 2317.5 | 2319.0 | 3 | | | | IIIG |
| | | | PALE | | | | 2317.5 | 2318.1 | 2 | | | | III |
| | | | LEAR | | | | 2317.6 | 2324.1 | 2 | | | | V |
| | | | CULG | | | | 2320.5 | 2322.0 | 3 | | | | POSS II |
| | | | CULG | | | | 2320.5 | 2324.0 | 2 | | | | IIIS |
| 15 | 0000 | 0718 | CULG | 0000.0 | 0330.0 | 1 | 0000.0 | 0400.0 | 1 | | | | IS,C,DC |
| | | | LEAR | | | | 0001.8 | 0002.5 | 1 | | | | III |
| | | | CULG | | | | 0002.0 | 0034.5 | 1 | | | | IIIN |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | | LEAR | | | | 0003.0 | 0358.0 | 1 | | | | CONT |
| | | LEAR | | | | 0017.5 | 0031.8 | 1 | | | | G |
| | | CULG | | | | 0024.0 | 0025.0 | 2 | | | | IIIG |
| | | CULG | | | | 0030.5 | 0032.0 | 2 | | | | IIIG |
| | | LEAR | | | | 0054.6 | 0055.6 | 1 | | | | III |
| | | LEAR | | | | 0143.8 | 0154.0 | 2 | | | | G |
| | | CULG | 0152.0 | 0153.5 | 1 | 0144.0 | 0153.5 | 2 | | | | IIIS |
| | | CULG | | | | 0400.0 | 0644.5 | 1 | | | | IN |
| | | LEAR | | | | 0403.8 | 0404.1 | 1 | | | | III |
| | | LEAR | | | | 0418.1 | 0422.6 | 1 | | | | III |
| | | LEAR | | | | 0425.3 | 0429.3 | 2 | | | | III |
| | | CULG | 0425.5 | 0428.0 | 2 | 0425.0 | 0429.0 | 2 | | | | IIIGG |
| | | LEAR | | | | 0436.0 | 0807.0 | 1 | | | | CONT |
| | 0617 0802 | WEIS | | | | 0620.6 | 0620.7 | 1 | | | | IIIB |
| | | WEIS | | | | 0629.1 | 0629.2 | 2 | | | | IIIB |
| | | WEIS | | | | 0630.2 | 0630.3 | 1 | | | | IIIB |
| | | CULG | | | | 0644.5 | 0653.5 | 1 | | | | IS |
| | | WEIS | | | | 0644.7 | 0646.3 | 2 | | | | IIIG |
| | | CULG | | | | 0646.0 | | 2 | | | | IIIB |
| | | WEIS | | | | 0649.4 | 0651.3 | 1 | | | | IIIG |
| | | WEIS | | | | 0714.4 | 0714.6 | 1 | | | | IIIB |
| | | LEAR | | | | 0752.8 | 0753.6 | 1 | | | | III |
| | | WEIS | | | | 0753.1 | 0753.4 | 4 | | | | IIIG |
| | | LEAR | | | | 0835.8 | 0836.3 | 1 | | | | III |
| | 0820 1534 | WEIS | | | | 0836.1 | 0836.3 | 1 | | | | IIIB |
| | | LEAR | | | | 0855.8 | 0913.0 | 1 | | | | G |
| | | WEIS | | | | 0856.1 | 0858.9 | 2 | | | | IIIG |
| | | WEIS | | | | 0904.6 | 0905.6 | 3 | | | | IIIG |
| | | WEIS | | | | 0911.8 | 0913.2 | 2 | | | | IIIG |
| | | WEIS | | | | 0930.6 | 0939.8 | 1 | | | | IIIG |
| | | WEIS | | | | 0930.9 | 0931.0 | 2 | | | | IIIB |
| | | WEIS | | | | 0949.4 | 0949.7 | 3 | | | | IIIB |
| | | WEIS | | | | 0956.6 | 0957.2 | 2 | | | | IIIG |
| | | WEIS | | | | 1004.2 | 1004.3 | 1 | | | | IIIB |
| | | WEIS | | | | 1027.8 | 1027.9 | 1 | | | | IIIB |
| | | WEIS | | | | 1033.6 | 1033.9 | 2 | | | | IIIG |
| | | WEIS | | | | 1111.6 | 1111.2 | 2 | | | | IIIB |
| | | WEIS | | | | 1201.9 | 1202.6 | 2 | | | | IIIG |
| | | WEIS | | | | 1204.6 | 1204.8 | 1 | | | | IIIG |
| | | WEIS | | | | 1219.6 | 1219.8 | 2 | | | | IIIB |
| | | WEIS | | | | 1232.4 | 1235.3 | 2 | | | | IIIG,U |
| | | WEIS | | | | 1254.3 | 1254.4 | 1 | | | | IIIB |
| | | WEIS | | | | 1257.3 | 1259.4 | 2 | | | | IIIG |
| | | WEIS | | | | 1307.8 | 1307.9 | 2 | | | | IIIB |
| | | WEIS | | | | 1313.1 | 1313.6 | 2 | | | | IIIG |
| | | WEIS | | | | 1315.2 | 1315.3 | 1 | | | | IIIB |
| | | WEIS | | | | 1325.8 | 1325.9 | 2 | | | | IIIG |
| | | WEIS | | | | 1331.8 | 1331.9 | 1 | | | | IIIB |
| | | WEIS | | | | 1340.2 | 1340.3 | 2 | | | | IIIB |
| | | WEIS | | | | 1354.9 | 1355.2 | 2 | | | | IIIG |
| | | WEIS | | | | 1406.3 | 1410.0 | 1 | | | | IIIG |
| | | WEIS | | | | 1414.4 | 1415.2 | 3 | | | | IIIG |
| | | SGMR | | | | 1414.5 | 1415.1 | 1 | | | | V |
| | | SGMR | | | | 1428.3 | 1428.6 | 1 | | | | III |
| | | WEIS | | | | 1428.4 | 1429.1 | 3 | | | | IIIG |
| | | WEIS | | | | 1433.9 | 1434.2 | 2 | | | | IIIG |
| | | WEIS | | | | 1442.3 | 1445.2 | 3 | | | | IIIG |
| | | SGMR | | | | 1442.5 | 1445.3 | 1 | | | | V |
| | | WEIS | | | | 1512.6 | 1513.4 | 2 | | | | IIIG |
| | | SGMR | | | | 1517.8 | 1518.1 | 1 | | | | V |
| | | WEIS | | | | 1517.8 | 1519.3 | 2 | | | | IIIG |
| | | WEIS | | | | 1521.4 | 1521.5 | 1 | | | | IIIB |
| | 1534 1617 | WEIS | | | | 1538.8 | 1544.1 | 2 | | | | IIIG |
| | | WEIS | | | | 1546.8 | 1546.9 | 1 | | | | IIIB |
| | | WEIS | | | | 1548.0 | 1552.6 | 1 | | | | IIIG |
| | | WEIS | | | | 1554.4 | 1554.8 | 2 | | | | IIIG |
| | | WEIS | | | | 1557.4 | 1558.1 | 1 | | | | IIIG |
| | | WEIS | | | | 1600.2 | 1606.0 | 3 | | | | IIIGG |
| | | SGMR | | | | 1735.6 | 1738.6 | 1 | | | | V |
| | 2018 2400 | CULG | | | | 2018.0 | 2120.0 | 1 | | | | IS,C,DC |
| | | CULG | | | | 2021.0 | 2126.0 | 1 | | | | IIIN |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | | | CULG | | | | 2120.0 | 2400.0 | 1 | | | | IS |
| | | | CULG | | | | 2126.0 | 2131.0 | 1 | | | | IIIS |
| 16 | 0000 | 0712 | CULG | | | | 0003.5 | 0017.0 | 1 | | | | IS |
| | | | LEAR | | | | 0146.8 | 0148.8 | 1 | | | | III |
| | | | CULG | | | | 0147.0 | 0207.0 | 1 | | | | IIIS |
| | | | LEAR | | | | 0154.6 | 0204.8 | 1 | | | | G |
| | | | LEAR | | | | 0332.6 | 0332.8 | 2 | | | | III |
| | | | CULG | | | | 0333.0 | | 2 | | | | IIIB |
| | | | CULG | | | | 0444.0 | 0705.0 | 1 | | | | IS,DC |
| | | | LEAR | | | | 0625.6 | 0628.1 | 1 | | | | III |
| | | | CULG | | | | 0626.0 | 0628.0 | 1 | | | | IIIG |
| | | | LEAR | | | | 0843.0 | 0856.3 | 2 | | | | G |
| | 0858 | 1018 | WEIS | | | | 0943.2 | 0943.3 | 1 | | | | IIIB |
| | 1135 | 1558 | WEIS | | | | | | | | | | |
| | 2018 | 2400 | CULG | 2123.5 | 2125.0 | 1 | | | | | | | IS |
| | | | CULG | | | | 2333.0 | 2334.5 | 2 | | | | IIIG |
| | | | LEAR | | | | 2333.3 | 2335.6 | 2 | | | | III |
| | | | PALE | | | | 2333.8 | 2334.1 | 1 | | | | III |
| 17 | | | LEAR | | | | 0128.1 | 0128.3 | 1 | | | | III |
| | 0000 | 0717 | CULG | | | | 0423.5 | 0505.0 | 1 | | | | IN |
| | | | LEAR | | | | 0451.0 | 0510.0 | 1 | | | | G |
| | | | CULG | | | | 0454.0 | 0504.0 | 2 | | | | IIIN |
| | | | CULG | 0457.0 | 0509.0 | 1 | 0451.0 | 0510.5 | 1 | | | | IIIS |
| | | | CULG | 0520.0 | 0704.0 | 1 | | | | | | | IN |
| | | | LEAR | | | | 0637.8 | 0645.0 | 1 | | | | III |
| | | | CULG | | | | 0638.0 | 0703.5 | 1 | | | | IIIN |
| | | | CULG | 0654.0 | | 2 | | | | | | | IIIG |
| | | | LEAR | | | | 0837.6 | 0838.0 | 1 | | | | III |
| | 0628 | 1221 | WEIS | | | | 0837.7 | 0837.9 | 3 | | | | IIIG |
| | | | WEIS | | | | 1050.8 | 1051.3 | 3 | | | | IIIG |
| | | | WEIS | | | | 1141.9 | 1142.4 | 2 | | | | IIIG |
| | | | WEIS | | | | 1210.4 | 1214.9 | 3 | | | | IIIGG,RS |
| | 1221 | 1556 | WEIS | | | | 1221.5 | 1223.2 | 1 | | | | II |
| | | | WEIS | | | | 1222.9 | 1223.0 | 1 | | | | IIIB |
| | | | WEIS | | | | 1522.3 | 1522.4 | 1 | | | | IIIB |
| | 2017 | 2400 | CULG | | | | 2114.0 | 2114.5 | 1 | | | | IIIG,V |
| | | | CULG | 2249.0 | 2326.5 | 1 | | | | | | | IN |
| 18 | | | LEAR | | | | 0250.6 | 0253.5 | 2 | | | | V |
| | 0000 | 0717 | CULG | | | | 0251.0 | 0253.0 | 3 | 0251.5 | 0253.0 | 2 | IIIG,V |
| | | | LEAR | | | | 0255.1 | 0255.3 | 2 | | | | III |
| | | | CULG | | | | 0255.5 | | 2 | | | | IIIB |
| | | | LEAR | | | | 0342.8 | 0343.3 | 1 | | | | III |
| | | | LEAR | | | | 0351.5 | 0353.3 | 1 | | | | V |
| | | | LEAR | | | | 0434.3 | 0435.5 | 1 | | | | III |
| | | | CULG | 0521.5 | 0620.0 | 1 | | | | | | | IN |
| | | | CULG | | | | 0647.0 | 0647.5 | 1 | | | | IIIG |
| | | | LEAR | | | | 0647.0 | 0706.8 | 1 | | | | GG |
| | 0646 | 1056 | WEIS | | | | 0651.6 | 0652.9 | 1 | | | | IIIG |
| | | | WEIS | | | | 0706.0 | 0706.7 | 1 | | | | IIIG |
| | | | WEIS | | | | 0731.2 | 0742.3 | 2 | | | | IIIG,RS |
| | | | LEAR | | | | 0738.1 | 0756.8 | 1 | | | | GG |
| | | | WEIS | | | | 0738.1 | 0739.1 | 2 | | | | IIIGG |
| | | | WEIS | | | | 0756.1 | 0756.4 | 2 | | | | IIIG |
| | | | WEIS | | | | 1044.4 | 1044.7 | 3 | | | | IIIG |
| | 1102 | 1554 | WEIS | | | | 1152.8 | 1153.8 | 3 | | | | IIIG |
| | 2146 | 2400 | CULG | | | | | | | | | | |
| 19 | | | LEAR | | | | 0321.5 | 0322.0 | 1 | | | | V |
| | | | LEAR | | | | 0336.5 | 0336.8 | 1 | | | | V |
| | 0000 | 0712 | CULG | 0410.5 | | 3 | | | | | | | IIIB |
| | | | CULG | 0457.0 | 0457.5 | 2 | 0457.0 | 0458.0 | 2 | | | | IIIG |
| | | | CULG | | | | 0611.0 | | 1 | | | | IIIG |
| | | | LEAR | | | | 0641.6 | 0649.3 | 1 | | | | III |
| | | | LEAR | | | | 0807.5 | 0808.1 | 1 | | | | III |
| | | | LEAR | | | | 0918.3 | 0918.5 | 1 | | | | III |
| | 0629 | 1547 | WEIS | | | | 0918.3 | 0918.6 | 2 | | | | IIIG |
| | | | WEIS | | | | 0929.3 | 0931.4 | 2 | | | | IIIG |
| | | | WEIS | | | | 0933.3 | 0934.8 | 3 | | | | IIIG |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | | | LEAR | | | | 0933.5 | 0934.0 | 1 | | | | III |
| | 2016 | 2400 | CULG | | | | 2032.0 | | 1 | | | | IIIB,U |
| | | | LEAR | | | | 2337.0 | 2343.3 | 1 | | | | III |
| 20 | 0000 | 0717 | CULG | 0011.5 | 0019.0 | 1 | 0012.5 | 0015.0 | 1 | | | | IN |
| | | | CULG | 0318.5 | 0319.5 | 1 | 0319.0 | 0319.5 | 1 | | | | IIIG |
| | | | LEAR | | | | 0319.0 | 0319.6 | 1 | | | | II |
| | 0625 | 1034 | WEIS | | | | | | | | | | |
| | | | SGMR | | | | 1743.3 | 1746.1 | 1 | | | | V |
| | | | SGMR | | | | 1943.3 | 1943.6 | 1 | | | | V |
| | 2017 | 2400 | CULG | | | | | | | | | | |
| | | | LEAR | | | | 2245.8 | 2246.6 | 1 | | | | III |
| 21 | 0000 | 0716 | CULG | | | | 0029.5 | | 1 | 0029.5 | | 1 | IIIB |
| | | | LEAR | | | | 0029.6 | 0029.8 | 1 | | | | III |
| | | | LEAR | | | | 0032.3 | 0033.8 | 2 | | | | V |
| | | | PALE | | | | 0032.3 | 0032.6 | 2 | | | | III |
| | | | CULG | | | | 0032.5 | 0033.0 | 2 | 0032.5 | 0033.0 | 2 | IIIG |
| | | | LEAR | | | | 0040.3 | 0041.0 | 1 | | | | III |
| | | | CULG | | | | 0246.0 | 0248.0 | 3 | 0246.5 | 0249.5 | 3 | IIIG,V |
| | | | LEAR | | | | 0246.0 | 0249.8 | 2 | | | | V |
| | | | PALE | | | | 0246.5 | 0247.6 | 2 | | | | III |
| | | | LEAR | | | | 0425.8 | 0427.1 | 1 | | | | III |
| | | | LEAR | | | | 0700.3 | 0700.8 | 1. | | | | III |
| | 0626 | 1548 | WEIS | | | | 0700.3 | 0700.6 | 2 | | | | U |
| | | | LEAR | | | | 0752.8 | 0754.1 | 2 | | | | III |
| | | | WEIS | | | | 0752.9 | 0754.9 | 2 | | | | IIIG |
| | | | WEIS | | | | 0857.8 | 0858.1 | 1 | | | | IIIG |
| | | | WEIS | | | | 1004.3 | 1004.7 | 1 | | | | IIIB |
| | | | WEIS | | | | 1009.2 | 1009.7 | 2 | | | | IIIG,RS |
| | | | WEIS | | | | 1039.8 | 1040.0 | 1 | | | | IIIG |
| | | | WEIS | | | | 1141.3 | 1141.4 | 1 | | | | IIIB |
| | | | WEIS | | | | 1248.3 | 1248.4 | 1 | | | | IIIB |
| | | | SGMR | | | | 1250.1 | 1250.3 | 1 | | | | III |
| | | | WEIS | | | | 1250.2 | 1251.7 | 3 | | | | IIIGG |
| | | | SGMR | | | | 1920.6 | 1923.0 | 1 | | | | V |
| | | | PALE | | | | 1920.8 | >1921.8 | 1 | | | | III |
| | 2017 | 2400 | CULG | | | | | | | | | | |
| 22 | 0000 | 0716 | CULG | | | | 0211.5 | 0212.0 | 1 | | | | IIIG |
| | | | LEAR | | | | 0236.8 | 0238.8 | 1 | | | | III |
| | | | CULG | | | | 0237.0 | | 1 | | | | IIIB |
| | | | CULG | | | | 0239.0 | | 2 | | | | IIIG |
| | | | CULG | | | | 0345.5 | | 1 | | | | IIIG |
| | | | LEAR | | | | 0352.8 | 0353.3 | 1 | | | | III |
| | | | LEAR | | | | 0409.6 | 0410.3 | 1 | | | | III |
| | | | CULG | 0411.5 | 0412.0 | 1 | 0411.5 | 0412.0 | 1 | | | | IIIG |
| | 0628 | 1352 | WEIS | | | | | | | | | | |
| | 1437 | 1546 | WEIS | | | | | | | | | | |
| | 2017 | 2400 | CULG | | | | | | | | | | |
| | | | PALE | | | | 2219.8 | 2221.3 | 2 | | | | III |
| | | | PALE | | | | 2231.8 | 2233.8 | 3 | | | | III |
| 23 | 0000 | 0716 | CULG | | | | | | | | | | |
| | | | LEAR | | | | 0055.3 | 0055.8 | 1 | | | | III |
| | | | LEAR | | | | 0431.6 | 0433.1 | 1 | | | | III |
| | | | LEAR | | | | 0629.1 | 0629.6 | 1 | | | | III |
| | 0630 | 1506 | WEIS | | | | | | | | | | |
| | 2017 | 2400 | CULG | | | | | | | | | | |
| 24 | 0000 | 0716 | CULG | | | | | | | | | | |
| | | | LEAR | | | | 0024.6 | 0025.5 | 1 | | | | III |
| | | | LEAR | | | | 0232.5 | 0235.6 | 1 | | | | V |
| | | | LEAR | | | | 0433.0 | 0435.1 | 1 | | | | V |
| | 0630 | 1542 | WEIS | | | | | | | | | | |
| | | | LEAR | | | | 0644.8 | 0645.3 | 1 | | | | III |
| | | | SGMR | | | | 1646.6 | 1647.1 | 1 | | | | III |
| | 2017 | 2400 | CULG | | | | | | | | | | |
| 25 | 0000 | 0715 | CULG | | | | | | | | | | |
| | 0632 | 0754 | WEIS | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 0759 | 1541 | WEIS | | | | | | | | | | |
| | 2018 | 2400 | CULG | | | | | | | | | | |
| 26 | 0000 | 0715 | CULG | | | | | | | | | | |
| | 0647 | 1541 | WEIS | | | | | | | | | | |
| | 2016 | 2400 | CULG | | | | | | | | | | |
| 27 | 0000 | 0716 | CULG | | | | | | | | | | |
| | 0634 | 1003 | WEIS | | | | | | | | | | |
| | 1017 | 1539 | WEIS | | | | | | | | | | |
| | 2035 | 2400 | CULG | | | | | | | | | | |
| 28 | 0000 | 0716 | CULG | | | | 0150.0 | 0151.0 | 1 | | | | IIIG |
| | 0636 | 1537 | WEIS | | | | | | | | | | |
| | | | CULG | | | | 0659.5 | 0702.5 | 2 | | | | IIIG,U |
| | | | LEAR | | | | 0659.6 | 0702.6 | 2 | | | | III |
| | | | SGMR | | | | 1451.1 | 1451.5 | 1 | | | | V |
| | | | PALE | | | | 1733.8 | 1736.6 | 1 | | | | III |
| | 2023 | 2400 | CULG | | | | | | | | | | |
| | | | PALE | | | | 2106.1 | 2121.0 | 2 | | | | GG |
| | | | PALE | | | | 2133.8 | 2138.3 | 1 | | | | V |
| | | | PALE | | | | 2142.3 | 2143.3 | 2 | | | | III |
| 29 | 0000 | 0715 | CULG | | | | 0248.0 | | 1 | | | | IIIB |
| | | | CULG | | | | 0312.5 | | 2 | | | | IIIB |
| | 0638 | 1224 | WEIS | | | | | | | | | | |
| | 1300 | 1535 | WEIS | | | | | | | | | | |
| | 2015 | 2400 | CULG | | | | 2218.0 | 2219.0 | 1 | | | | IS |
| 30 | 0000 | 0517 | CULG | | | | | | | | | | |
| | 1126 | 1533 | WEIS | | | | 1143.2 | 1143.4 | 1 | | | | IIIB |
| | | | WEIS | | | | 1148.6 | 1148.9 | 1 | | | | IIIG |
| | 2210 | 2400 | CULG | | | | | | | | | | |
| 31 | 0000 | 0716 | CULG | | | | | | | | | | |
| | | | LEAR | | | | 0029.8 | 0030.3 | 1 | | | | III |
| | 0641 | 1530 | WEIS | | | | | | | | | | |
| | | | SGMR | | | | 1349.0 | 1349.5 | 1 | | | | V |
| | 2258 | 2400 | CULG | | | | | | | | | | |

**The symbols used under the column heading SPECTRAL TYPE have the following definitions:**

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

# GEOMAGNETIC ACTIVITY INDICES

October 1983

| Day | | Kp Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Sum | Ap | Cp | Km Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Am | N | aa Provisional S | M | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | 2- | 1 | 1+ | 1 | 4 | 3- | 4- | 17+ | 11 | 0.6 | 2- | 2- | 1+ | 2- | 1+ | 3+ | 3- | 4- | 20 | 26 | 21 | 13 | 35 | |
| 2 | | 3+ | 5 | 4 | 3+ | 4- | 3+ | 3+ | 3+ | 29+ | 23 | 1.1 | 3 | 4- | 4- | 3 | 3 | 3+ | 3- | 3 | 33 | 42 | 29 | 33 | 37 | |
| 3 | | 3- | 3 | 4+ | 4 | 3+ | 2+ | 2 | 4- | 25+ | 18 | 1.0 | 3- | 2+ | 3+ | 4- | 4- | 2+ | 2 | 3+ | 30 | 25 | 28 | 27 | 26 | |
| 4 | D3 | 3 | 3+ | 4+ | 5 | 6 | 7- | 4- | 3 | 35 | 43 | 1.5 | 3 | 3- | 4- | 5- | 6- | 6- | 3 | 3- | 64 | 52 | 62 | 41 | 73 | |
| 5 | Q0A | 2 | 2- | 3- | 2 | 3- | 1+ | 2- | 3- | 17- | 8 | 0.5 | 2- | 2- | 2 | 2+ | 2+ | 1+ | 2- | 3- | 15 | 17 | 14 | 14 | 17 | |
| 6 | | 3+ | 3- | 3 | 3 | 4- | 5 | 4 | 3+ | 28 | 22 | 1.1 | 3 | 2+ | 3- | 3 | 3 | 4 | 4- | 3 | 33 | 44 | 30 | 23 | 52 | |
| 7 | | 2+ | 4 | 2 | 2+ | 2- | 3- | 2- | 3- | 19+ | 11 | 0.6 | 2+ | 3+ | 2+ | 2+ | 2- | 2+ | 2 | 3- | 20 | 20 | 16 | 20 | 17 | |
| 8 | | 3 | 3- | 3- | 2+ | 3 | 5- | 3+ | 2+ | 24 | 16 | 0.9 | 2+ | 2 | 2+ | 2+ | 3- | 4 | 3+ | 2+ | 25 | 27 | 21 | 16 | 32 | |
| 9 | Q4 | 3- | 2- | 1 | 1- | 1 | 1+ | 1 | 1+ | 11- | 5 | 0.2 | 3- | 1+ | 2- | 0+ | 1+ | 1+ | 1 | 1+ | 11 | 12 | 8 | 11 | 9 | C |
| 10 | Q8A | 0+ | 1 | 2- | 1+ | 1+ | 2+ | 4- | 2- | 13+ | 7 | 0.4 | 1- | 1 | 2- | 2- | 1+ | 2 | 3+ | 2- | 14 | 16 | 15 | 11 | 20 | |
| 11 | Q5 | 2- | 2+ | 2+ | 2 | 2- | 1+ | 0+ | 0 | 12- | 6 | 0.2 | 1+ | 2- | 2 | 1+ | 2 | 2- | 1- | 0+ | 10 | 9 | 16 | 19 | 7 | K |
| 12 | Q3 | 0+ | 1 | 1- | 1+ | 1- | 1 | 2- | 2 | 9- | 4 | 0.1 | 1- | 1 | 1 | 2- | 1 | 1 | 2- | 2+ | 9 | 10 | 13 | 9 | 15 | C |
| 13 | D4 | 5- | 5+ | 4 | 4 | 3+ | 5- | 3 | 4- | 33- | 30 | 1.3 | 4+ | 4 | 4- | 4+ | 4- | 4+ | 3- | 3+ | 49 | 50 | 61 | 63 | 48 | |
| 14 | | 4- | 3- | 3+ | 2+ | 3 | 3+ | 5- | 5- | 28- | 22 | 1.1 | 3- | 2 | 3- | 3- | 3 | 3 | 4 | 5- | 35 | 43 | 30 | 24 | 50 | |
| 15 | | 4 | 4- | 3 | 4 | 3+ | 2+ | 4- | 3 | 27 | 19 | 1.0 | 3+ | 3+ | 3- | 4 | 4- | 3- | 4- | 3- | 36 | 34 | 32 | 34 | 32 | |
| 16 | | 2 | 4 | 2+ | 2- | 2 | 3 | 3 | 3 | 21 | 13 | 0.7 | 2+ | 4- | 2 | 2 | 3 | 3- | 3- | 3- | 24 | 28 | 15 | 16 | 28 | |
| 17 | D2 | 2+ | 3+ | 5 | 5 | 5+ | 5+ | 5+ | 6+ | 38 | 48 | 1.6 | 2 | 3- | 5- | 5 | 5 | 4+ | 5- | 5 | 66 | 68 | 53 | 38 | 82 | |
| 18 | D1 | 5+ | 5 | 5+ | 6- | 5 | 5 | 6- | 3 | 40 | 51 | 1.6 | 5- | 4 | 5- | 5 | 4+ | 5- | 5 | 3- | 70 | 79 | 74 | 75 | 79 | |
| 19 | Q9A | 3 | 3 | 3- | 2 | 1- | 2 | 1 | 1- | 15 | 8 | 0.4 | 2+ | 2 | 2+ | 2+ | 1 | 2 | 1+ | 1 | 14 | 16 | 11 | 19 | 9 | |
| 20 | Q6 | 0 | 2+ | 1+ | 2 | 1- | 1 | 2+ | 2+ | 12 | 6 | 0.3 | 1 | 2 | 1+ | 2- | 1- | 1+ | 3- | 2+ | 12 | 15 | 11 | 11 | 15 | K |
| 21 | | 2- | 1 | 3- | 3+ | 3+ | 4- | 4- | 4 | 23+ | 16 | 0.9 | 1+ | 1 | 3- | 3 | 3- | 3 | 3+ | 3+ | 26 | 35 | 27 | 23 | 40 | |
| 22 | | 5 | 4 | 4- | 3- | 3+ | 2 | 2+ | 3- | 26- | 19 | 1.0 | 4 | 3+ | 2+ | 3 | 3 | 2 | 2 | 3- | 28 | 34 | 21 | 34 | 22 | |
| 23 | | 2+ | 2+ | 2+ | 3- | 4 | 3+ | 5 | 5- | 27- | 21 | 1.1 | 2- | 2- | 2 | 3 | 4- | 3+ | 4 | 4- | 31 | 40 | 36 | 18 | 58 | |
| 24 | | 4+ | 3 | 2+ | 3+ | 4- | 4- | 5- | 3 | 28 | 22 | 1.1 | 4 | 3- | 2+ | 4- | 3+ | 3+ | 4 | 2+ | 36 | 42 | 34 | 34 | 41 | |
| 25 | Q7 | 2+ | 2 | 1 | 1+ | 2 | 2- | 1 | 2 | 13+ | 6 | 0.3 | 2 | 1+ | 1 | 1+ | 2 | 2 | 1 | 2 | 12 | 15 | 11 | 10 | 16 | C |
| 26 | Q2 | 0+ | 1+ | 2- | 1 | 0+ | 0+ | 0+ | 0+ | 6- | 3 | 0.1 | 0+ | 1 | 1+ | 1 | 1- | 1- | 0 | 0+ | 5 | 4 | 6 | 8 | 3 | CC |
| 27 | Q1 | 0 | 0+ | 1- | 0+ | 0+ | 1- | 1+ | 0 | 4- | 2 | 0.0 | 0+ | 0+ | 0+ | 0 | 1- | 1- | 2- | 0 | 4 | 5 | 7 | 5 | 7 | CC |
| 28 | | 2+ | 1- | 0 | 0 | 0+ | 2 | 2+ | 5 | 13- | 10 | 0.5 | 2+ | 0+ | 0 | 0 | 0 | 2 | 3- | 4+ | 16 | 20 | 17 | 7 | 30 | |
| 29 | D5 | 5- | 4+ | 5- | 5- | 5- | 3+ | 5- | 4 | 35 | 34 | 1.3 | 4- | 3+ | 4 | 5- | 5- | 3 | 4 | 3+ | 51 | 54 | 50 | 53 | 51 | |
| 30 | | 4 | 3+ | 4- | 2+ | 3+ | 4 | 4- | 2- | 26 | 19 | 1.0 | 3 | 3- | 3 | 2+ | 3 | 4 | 4- | 2- | 30 | 34 | 24 | 24 | 35 | |
| 31 | | 3- | 2 | 3- | 3- | 2+ | 2+ | 1- | 3- | 18 | 10 | 0.5 | 2 | 1+ | 2+ | 3- | 3- | 2+ | 1+ | 2+ | 17 | 19 | 18 | 21 | 17 | |
| Mean | | | | | | | | | | | 17 | 0.77 | | | | | | | | | 27.3 | 30.3 | 26.2 | 28.3 | | |

| Day | Kn Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | An | Ks Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | As | $S_a$ | Prov $R_I$ | $R_a$ | $R_s$ | IMF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2- | 1+ | 1+ | 2- | 1+ | 4- | 3- | 4- | 21 | 1+ | 2- | 1+ | 2 | 1+ | 3+ | 3- | 4- | 20 | 117.5 | 32 | 32 | 65 | T | - |
| 2 | 3 | 4 | 4- | 3 | 3 | 3 | 3 | 3 | 36 | 3- | 3 | 3+ | 3- | 3 | 3+ | 3- | 3 | 30 | 120.4 | 51 | 56 | 68 | A | - |
| 3 | 2+ | 2+ | 4- | 4 | 4 | 3- | 2 | 4- | 34 | 3- | 3- | 3 | 4- | 3 | 2 | 2- | 3- | 25 | 123.1 | 63 | 68 | 71 | A | - |
| 4 | 3 | 3- | 4+ | 5 | 6 | 6+ | 3+ | 3- | 76 | 3- | 3- | 3+ | 5- | 5 | 5+ | 3 | 3- | 52 | 125.1 | 74 | 73 | 73 | A | - |
| 5 | 2- | 1+ | 2 | 2 | 3- | 1+ | 2- | 3- | 14 | 2 | 2 | 2 | 2+ | 2- | 1 | 2- | 3- | 15 | 126.6* | 65 | 59 | 75 | T | - |
| 6 | 3- | 2+ | 3- | 3+ | 3 | 4+ | 4- | 3+ | 34 | 3+ | 2+ | 3- | 3 | 3 | 4- | 3+ | 3 | 31 | 132.7 | 75 | 74 | 81 | A | - |
| 7 | 2 | 3+ | 2 | 2 | 2- | 3- | 2 | 2+ | 19 | 3- | 3+ | 3- | 2+ | 1+ | 2+ | 2 | 3- | 21 | 133.9 | 87 | 86 | 83 | T | - |
| 8 | 2+ | 2 | 3- | 2 | 2+ | 4 | 3 | 2 | 25 | 3- | 2 | 2 | 3- | 3- | 4 | 3+ | 2+ | 26 | 131.1* | 99 | 92 | 80 | T | - |
| 9 | 2 | 1+ | 2- | 0+ | 2- | 2- | 1 | 1+ | 9 | 3 | 1+ | 2 | 0+ | 1+ | 1+ | 1+ | 1+ | 12 | 130.4 | 106 | 101 | 79 | T | - |
| 10 | 1- | 1 | 2- | 1+ | 1+ | 2+ | 3+ | 2 | 14 | 1- | 1+ | 2- | 2- | 1+ | 2- | 3+ | 2- | 13 | 133.6* | 108 | 111 | 82 | T | - |
| 11 | 1 | 2 | 2+ | 1+ | 2- | 2- | 1 | 0+ | 10 | 2- | 2- | 2 | 1+ | 2 | 2- | 1- | 0 | 10 | 138.3 | 130 | 135 | 87 | T | - |
| 12 | 0+ | 1- | 1- | 1+ | 1 | 1+ | 2- | 2+ | 9 | 1+ | 1 | 1 | 2- | 1+ | 1 | 2- | 3- | 10 | 133.7 | 122 | 115 | 82 | T | - |
| 13 | 4+ | 4 | 4- | 4+ | 4- | 4+ | 3 | 3+ | 49 | 4+ | 4+ | 4- | 4+ | 4- | 4 | 2+ | 4- | 49 | 133.5* | 100 | 92 | 82 | A | - |
| 14 | 3 | 2 | 3- | 3 | 3+ | 3+ | 4+ | 5 | 41 | 3- | 2+ | 3 | 2 | 3- | 3 | 4- | 4 | 29 | 131.5* | 75 | 75 | 80 | A | - |
| 15 | 3+ | 4- | 3- | 4+ | 4- | 2+ | 4- | 3- | 37 | 3 | 3+ | 3- | 4- | 4- | 3 | 4- | 3- | 34 | 127.0 | 72 | 65 | 75 | A | - |
| 16 | 2- | 4 | 2 | 2 | 3+ | 3- | 3 | 3 | 27 | 3- | 3 | 2+ | 2 | 2+ | 3- | 3- | 2+ | 22 | 117.2A | 61 | 59 | 65 | A | - |
| 17 | 2- | 3- | 5 | 5+ | 5 | 5- | 5 | 5 | 73 | 2+ | 3- | 4 | 4+ | 5- | 4 | 4+ | 5 | 58 | 110.9* | 60 | 54 | 58 | A | - |
| 18 | 5 | 4 | 5- | 5+ | 5- | 5 | 5 | 2+ | 76 | 4+ | 4 | 5- | 4+ | 4+ | 4+ | 5 | 3 | 64 | 103.6 | 63 | 58 | 50 | A | - |
| 19 | 2+ | 2+ | 2+ | 3- | 1 | 2+ | 1 | 0+ | 14 | 3- | 2 | 2 | 2 | 1- | 2- | 2- | 1+ | 13 | 105.2 | 46 | 38 | 52 | A | - |
| 20 | 0+ | 2- | 1 | 2 | 1 | 1+ | 2+ | 2+ | 11 | 1+ | 2 | 1+ | 2- | 0+ | 1+ | 3- | 2+ | 12 | 99.1 | 26 | 24 | 45 | A | - |
| 21 | 1+ | 1- | 3 | 3+ | 3 | 4- | 3+ | 4- | 29 | 2- | 1+ | 3- | 3 | 2+ | 3- | 3 | 3 | 23 | 89.3 | 18 | 19 | 34 | T | - |
| 22 | 4- | 4- | 3- | 3 | 3 | 2 | 2 | 3- | 28 | 4 | 3 | 2 | 3 | 3- | 2 | 2+ | 3- | 27 | 87.2 | 22 | 25 | 32 | T | - |
| 23 | 2 | 2 | 2+ | 3- | 4- | 4- | 4+ | 4 | 35 | 2- | 1+ | 2- | 3 | 3+ | 3 | 4- | 3+ | 27 | 87.8 | 22 | 16 | 33 | A | - |
| 24 | 4 | 3- | 2+ | 4- | 3+ | 4- | 4 | 2+ | 38 | 4 | 3 | 2+ | 3+ | 3 | 3+ | 4 | 3- | 35 | 88.6 | 20 | 18 | 34 | T | - |
| 25 | 2- | 2- | 1 | 1+ | 2 | 2- | 1- | 2 | 11 | 2+ | 1 | 1+ | 1+ | 2 | 2+ | 1+ | 2 | 13 | 89.2 | 18 | 17 | 34 | T | - |
| 26 | 0 | 1 | 1+ | 1- | 1- | 1- | 0 | 0 | 4 | 1 | 1+ | 2- | 1+ | 1- | 1- | 0 | 1- | 6 | 89.1 | 22 | 13 | 34 | T | - |
| 27 | 0 | 0+ | 0+ | 0 | 0+ | 1 | 1+ | 0 | 3 | 0+ | 0+ | 0+ | 0 | 1- | 0+ | 2- | 0+ | 4 | 88.9 | 12 | 12 | 34 | - | - |
| 28 | 2 | 0+ | 0 | 0 | 0 | 2+ | 2+ | 4 | 15 | 3- | 0+ | 0 | 0 | 0 | 2 | 3- | 4+ | 17 | 90.4 | 11 | 12 | 36 | - | - |
| 29 | 4- | 3+ | 4+ | 5- | 5- | 3+ | 4 | 4- | 55 | 3+ | 4- | 4- | 4+ | 4+ | 3 | 4 | 3+ | 47 | 90.7 | 16 | 0 | 36 | - | - |
| 30 | 3+ | 3- | 3+ | 3- | 3 | 4+ | 4- | 1+ | 35 | 3 | 2+ | 3- | 2 | 3- | 3+ | 3+ | 2- | 24 | 92.6 | 15 | 7 | 38 | - | - |
| 31 | 2 | 1+ | 3- | 3- | 3 | 3- | 1 | 3- | 19 | 2+ | 1+ | 2 | 3- | 2+ | 2- | 1+ | 2- | 14 | 95.5* | 19 | 14 | 41 | - | - |
| Mean | | | | | | | | | 29.1 | | | | | | | | | 25.3 | 111.7 | 55.2 | 52.3 | 58.6 | | |

## DAILY AVERAGE INDICES Ap

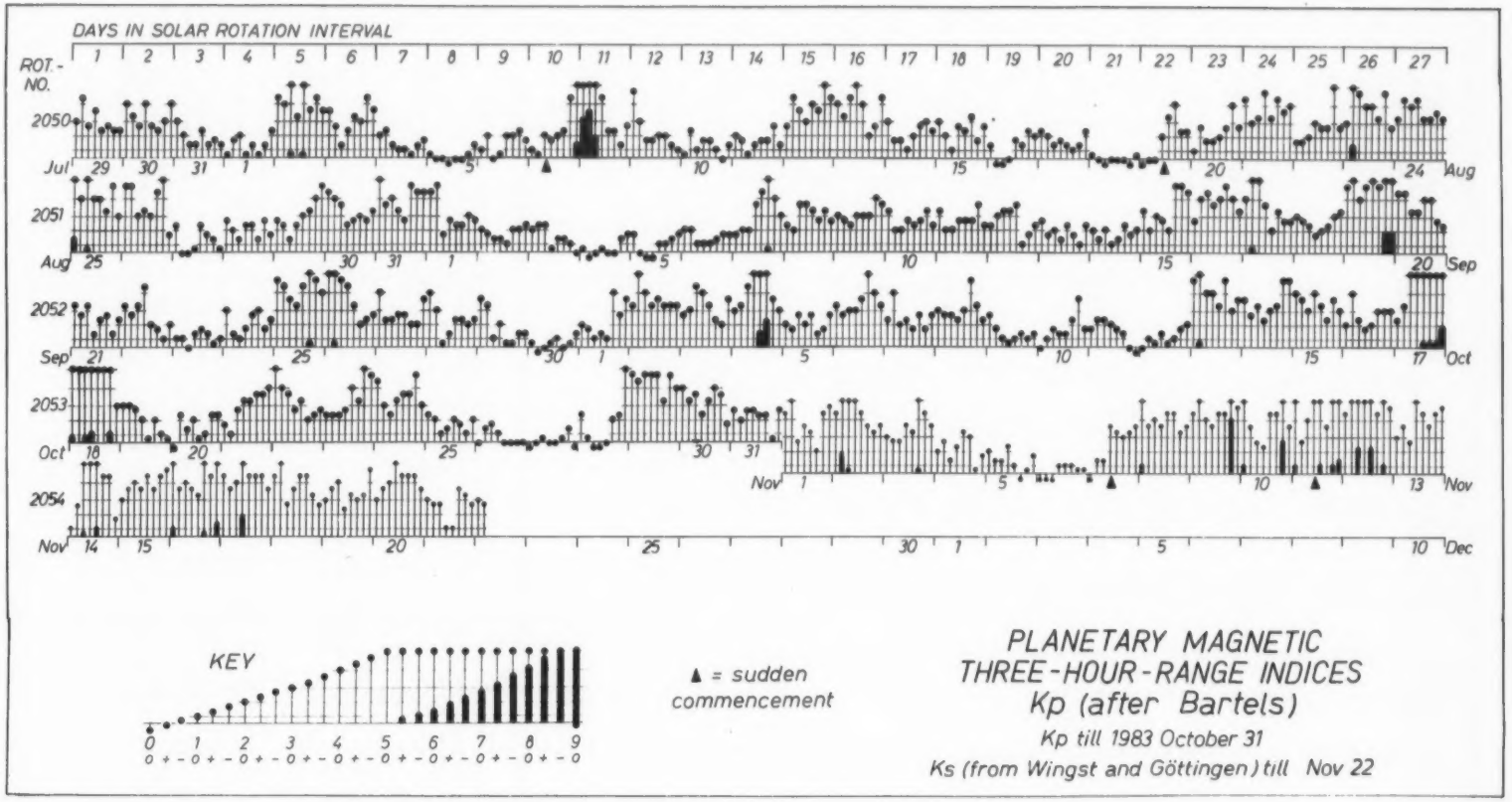
| DAY | 1982 NOV | DEC | 1983 JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 2 | 11 | 11 | 21 | 20 | 24 | 13 | 6 | 5 | 17 | 11 |
| 2 | 32 | 4 | 7 | 5 | 86 | 16 | 14 | 8 | 9 | 33 | 6 | 23 |
| 3 | 21 | 9 | 11 | 7 | 36 | 15 | 10 | 6 | 8 | 17 | 6 | 18 |
| 4 | 8 | 13 | 9 | 59 | 26 | 16 | 26 | 3 | 8 | 5 | 3 | 43 |
| 5 | 9 | 11 | 6 | 143 | 28 | 17 | 24 | 6 | 6 | 2 | 3 | 8 |
| 6 | 11 | 3 | 3 | 47 | 12 | 35 | 14 | 11 | 14 | 6 | 5 | 22 |
| 7 | 4 | 29 | 4 | 43 | 7 | 34 | 8 | 6 | 14 | 18 | 22 | 11 |
| 8 | 12 | 27 | 9 | 18 | 6 | 25 | 11 | 12 | 10 | 62 | 15 | 16 |
| 9 | 8 | 18 | 20 | 18 | 8 | 19 | 6 | 20 | 12 | 11 | 16 | 5 |
| 10 | 11 | 46 | 78 | 23 | 7 | 22 | 8 | 37 | 5 | 5 | 12 | 7 |
| 11 | 20 | 20 | 11 | 24 | 24 | 8 | 50 | 10 | 4 | 6 | 12 | 6 |
| 12 | 16 | 14 | 18 | 33 | 53 | 11 | 52 | 16 | 16 | 26 | 13 | 4 |
| 13 | 18 | 6 | 8 | 35 | 24 | 36 | 37 | 70 | 19 | 25 | 7 | 30 |
| 14 | 12 | 8 | 8 | 28 | 26 | 45 | 23 | 12 | 6 | 9 | 6 | 22 |
| 15 | 13 | 11 | 22 | 25 | 15 | 59 | 20 | 17 | 5 | 10 | 21 | 19 |
| 16 | 9 | 13 | 25 | 30 | 11 | 33 | 9 | 8 | 21 | 4 | 26 | 13 |
| 17 | 6 | 62 | 25 | 16 | 11 | 19 | 64 | 17 | 26 | 6 | 25 | 48 |
| 18 | 12 | 41 | 32 | 14 | 20 | 11 | 12 | 37 | 20 | 2 | 11 | 51 |
| 19 | 10 | 34 | 17 | 10 | 28 | 9 | 5 | 20 | 9 | 9 | 54 | 8 |
| 20 | 6 | 46 | 14 | 41 | 32 | 13 | 10 | 17 | 7 | 11 | 22 | 6 |
| 21 | 25 | 37 | 12 | 36 | 12 | 12 | 29 | 20 | 6 | 25 | 11 | 16 |
| 22 | 30 | 42 | 8 | 21 | 9 | 17 | 51 | 20 | 10 | 15 | 13 | 19 |
| 23 | 36 | 26 | 10 | 17 | 9 | 17 | 38 | 17 | 23 | 32 | 4 | 21 |
| 24 | 83 | 19 | 22 | 14 | 10 | 61 | 77 | 6 | 40 | 23 | 9 | 22 |
| 25 | 54 | 14 | 16 | 6 | 50 | 32 | 11 | 5 | 12 | 36 | 33 | 6 |
| 26 | 26 | 9 | 12 | 5 | 13 | 28 | 10 | 13 | 7 | 26 | 28 | 3 |
| 27 | 17 | 18 | 10 | 7 | 3 | 14 | 11 | 8 | 10 | 5 | 13 | 2 |
| 28 | 28 | 21 | 10 | 8 | 37 | 12 | 5 | 12 | 11 | 8 | 10 | 10 |
| 29 | 32 | 20 | 16 |  | 40 | 39 | 5 | 13 | 15 | 17 | 8 | 34 |
| 30 | 13 | 15 | 19 |  | 27 | 26 | 9 | 7 | 18 | 18 | 3 | 19 |
| 31 |  | 7 | 13 |  | 28 |  | 11 |  | 7 | 29 |  | 10 |
| MEAN | 21 | 21 | 16 | 27 | 23 | 24 | 22 | 16 | 12 | 16 | 14 | 17 |

**Footnote for GEOMAGNETIC ACTIVITY INDICES TABLE (see preceding page)**

The Geophysikalisches Institut, University of Goettingen, prepares the quiet (Q) and disturbed (D) days, the geomagnetic planetary 3-hour-range indices (Kp), the average amplitude (Ap) and the magnetic character figures (Cp). The 10 most quiet days (Q1-Q10) and the five most disturbed days (D1-D5) are ordered from most quiet and from most disturbed, respectively. A and K mark quiet days that are not really quiet; an asterisk marks disturbed days that are not really disturbed. Geomagnetic 3-hour indices Km, Kn, Ks; daily mean values Am, An, As; and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For the aa indices, daily north (N) and south (S) values and half-daily antipodal mean (M) values are given; quiet 24- and 48-hour intervals centered on 1200 UT are indicated by C if they are really quiet and by K if they are quiet with some slightly disturbed 3-hour periods.

Provisional sunspot numbers (Ri) are prepared by A. Koeckelenbergh, Observatoire Royal de Belgique, Bruxelles, Belgique. Sunspot numbers (Ra) are prepared by the American Association of Variable Star Observers. Sunspot numbers (Rs) are computed from the daily Sa values by WDC-A for Solar-Terrestrial Physics. The inferred interplanetary magnetic field (IMF) directions are prepared from Vostok observations for the first half-day by the Institute for Terrestrial Magnetism, Ionosphere and Radio Propagation, Moscow, USSR; and for the second half-day they are prepared from Thule observations by the Space Environment Services Center, NOAA, Boulder, Colorado, USA. T = toward sun, A = away from sun, * = effect doubtful or not discernable, - = missing data.

# GEOMAGNETIC ACTIVITY INDICES



# PRINCIPAL MAGNETIC STORMS

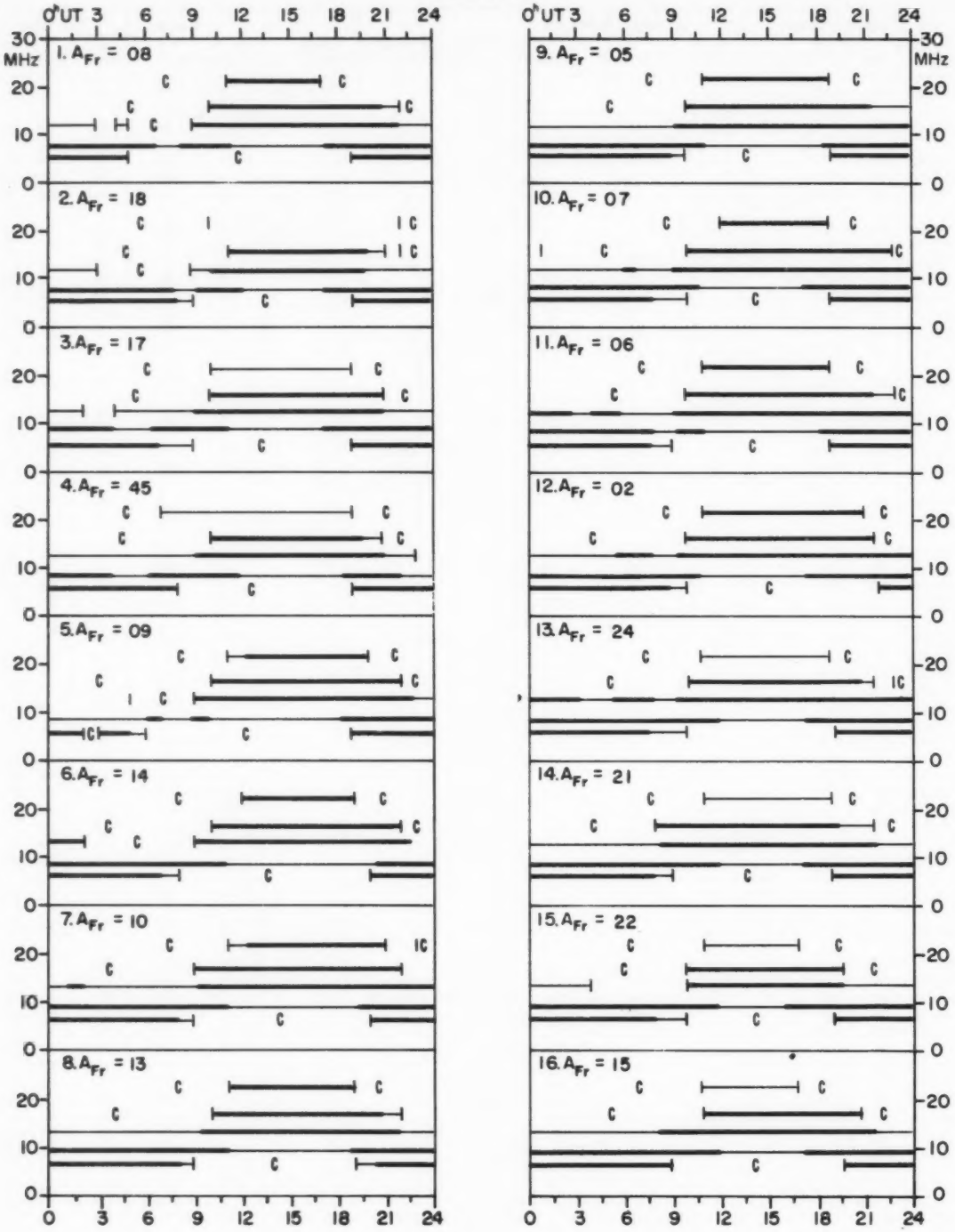
OCTOBER 1983

| Sta | Geomag Lat | Commencement Day | Time (UT) | Type | SC Amplitudes D (MIn) | H (Gamma) | Z (Gamma) | Maximum 3-Hour K Index Day(3-Hour Periods) | K | Ranges D (MIn) | H (Gamma) | Z (Gamma) | End Day | Hour (UT) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HYB | 07.6N | 01 | 0400 | .. | .. | .. | .. | 02(6) | 4 | 5 | 105 | 33 | 02 | 22 |
| SIT | 60.0N | 02 | 03-- | .. | .. | .. | .. | 04(6) | 7 | -- | -- | -- | 04 | 20 |
| FRD | 49.6N | 03 | ---- | .. | .. | .. | .. | 04(5) | 7 | 24 | 224 | 57 | -- | -- |
| HYB | 07.6N | 03 | 0600 | .. | .. | .. | .. | 04(5,6) | 6 | 8 | 190 | 36 | 05 | 14 |
| KGL | 56.5S | 03 | 0600 | .. | .. | .. | .. | 04(5,6) | 9 | -- | -- | -- | 04 | 23 |
| WIT | 54.2N | 04 | 0700 | .. | .. | .. | .. | 04(6) | 6 | 29 | 175 | 115 | 04 | 22 |
| JAI | 17.3N | 04 | 0542 | SC | - .2 | 13 | - 2 | | - | 9 | 146 | 49 | 04 | 24 |
| UJJ | 13.5N | 04 | 0542 | SC | - .2 | 18 | - 3 | | - | 7 | 161 | 45 | 04 | 24 |
| ABG | 09.5N | 04 | 0542 | SC | - .4 | 15 | - 3 | | - | 7 | 175 | 50 | 04 | 24 |
| GUA | 04.0N | 04 | 0542 | .. | .. | .. | .. | 04(6) | 5 | -- | 90 | 20 | 04 | 20 |
| TRD | 01.1S | 04 | 0542 | SC | .1 | 32 | 32 | | - | 3 | 266 | 117 | 04 | 24 |
| PMG | 18.6S | 04 | 0542 | SC | .7 | 11 | 12 | 04(5,6) | 6 | 6 | 100 | 70 | 04 | 18 |
| HER | 33.7S | 04 | 05-- | .. | .. | .. | .. | 04(6) | 6 | 21 | 182 | 138 | 04 | 21 |
| HYB | 07.6N | 05 | 2000 | .. | .. | .. | .. | 06(6) | 5 | 6 | 101 | 50 | 06 | 23 |
| KGL | 56.5S | 06 | 1241 | SC | - 4 | - 20 | - 8 | 06(6,7) | 5 | 20 | 135 | 95 | 07 | -- |
| COL | 64.6N | 12 | 21-- | .. | .. | .. | .. | 13(4,5) 14(4) | 6 | 157 | 1020 | 700 | 15 | 22 |
| FRD | 49.6N | 12 | 23-- | .. | .. | .. | .. | 13(1)14(8)15(2)16(2) 17(3,4,8) 18(2,4,5) | 5 | 23 | 125 | 82 | 19 | -- |
| HYB | 07.6N | 12 | 2000 | .. | .. | .. | .. | 13(5) 14(8) | 5 | 6 | 124 | 46 | 15 | 21 |
| GUA | 04.0N | 12 | 2339 | .. | .. | .. | .. | 13(1) | 6 | -- | 180 | 40 | 13 | 19 |
| JAI | 17.3N | 13 | 0439 | SC | - .5 | 18 | - 5 | | - | 6 | 116 | 54 | 15 | 24 |
| UJJ | 13.5N | 13 | 0439 | SC | - .3 | 25 | - 8 | | - | 6 | 114 | 51 | 15 | 24 |
| ABG | 09.5N | 13 | 0439 | SC | - .7 | 22 | - 9 | | - | 5 | 113 | 57 | 15 | 24 |
| TRD | 01.1S | 13 | 0439 | SC | - .2 | 61 | 60 | | - | 3 | 210 | 116 | 15 | 24 |
| COL | 64.6N | 17 | 03-- | .. | .. | .. | .. | 17(4) 18(3) | 7 | 314 | 1660 | 1020 | 19 | 01 |
| SIT | 60.0N | 17 | 07-- | .. | .. | .. | .. | 17(5) | 7 | -- | -- | -- | 19 | 09 |
| WIT | 54.2N | 17 | 0600 | .. | .. | .. | .. | 17(6,7,8) 18(6,7) | 6 | 44 | 188 | 106 | 18 | 23 |
| JAI | 17.3N | 17 | 0400 | .. | .. | .. | .. | | - | 7 | 155 | 45 | 18 | 24 |
| UJJ | 13.5N | 17 | 0400 | .. | .. | .. | .. | | - | 6 | 163 | 37 | 18 | 24 |
| ABG | 09.5N | 17 | 0400 | .. | .. | .. | .. | | - | 5 | 177 | 35 | 18 | 24 |
| HYB | 07.6N | 17 | 0450 | .. | .. | .. | .. | 17(5) 18(6) | 6 | 5 | 198 | 30 | 18 | 23 |
| GUA | 04.0N | 17 | 0452 | .. | .. | .. | .. | 17(3) | 6 | -- | 140 | 30 | 18 | 05 |
| TRD | 01.1S | 17 | 0400 | .. | .. | .. | .. | | - | 3 | 263 | 121 | 18 | 24 |
| PMG | 18.6S | 17 | 04-- | .. | .. | .. | .. | 18(4) | 6 | 6 | 160 | 60 | 19 | 03 |
| HER | 33.7S | 17 | 04-- | .. | .. | .. | .. | 17(4) 18(1,6,7) | 5 | 29 | 138 | 104 | 18 | 22 |
| GNA | 43.2S | 17 | 05-- | .. | .. | .. | .. | 17(5) | 6 | 27 | 110 | 180 | 18 | 23 |
| CNB | 43.9S | 17 | 05-- | .. | .. | .. | .. | 17(3) 18(1,3,4,5,6) | 5 | 22 | 152 | 57 | 18 | 21 |
| KGL | 56.5S | 17 | 0400 | .. | .. | .. | .. | 18(6,7) | 7 | -- | -- | -- | 19 | 05 |
| GUA | 04.0N | 18 | 0731 | .. | .. | .. | .. | 18(4) | 5 | -- | 90 | 20 | 18 | 21 |
| HYB | 07.6N | 21 | 0835 | .. | .. | .. | .. | 23(6) | 5 | 3 | 119 | 23 | 24 | 19 |
| COL | 64.6N | 28 | 15-- | .. | .. | .. | .. | 29(3) | 7 | 179 | 1320 | 770 | 30 | 22 |
| SIT | 60.0N | 28 | 16-- | .. | .. | .. | .. | 29(4) | 7 | -- | -- | 540 | 30 | 19 |
| WIT | 54.2N | 28 | 2200 | .. | .. | .. | .. | 29(7,8) 30(6,7) | 5 | 30 | 155 | 55 | 30 | 02 |
| FRD | 49.6N | 28 | 2207 | SC | 1 | - 22 | 3 | 28(8) | 6 | 22 | 132 | 60 | 03 | 00 |
| JAI | 17.3N | 28 | 1600 | .. | .. | .. | .. | | - | 5 | 115 | 31 | 30 | 24 |
| UJJ | 13.5N | 28 | 1600 | .. | .. | .. | .. | | - | 4 | 114 | 28 | 30 | 24 |
| ABG | 09.5N | 28 | 1600 | .. | .. | .. | .. | | - | 5 | 99 | 31 | 30 | 24 |
| HYB | 07.6N | 28 | 1600 | .. | .. | .. | .. | 28(8) 29(7) | 5 | 4 | 121 | 19 | 30 | 01 |
| GUA | 04.0N | 28 | 1530 | .. | .. | .. | .. | 28(8) | 6 | -- | 130 | 40 | 29 | 19 |
| TRD | 01.1S | 28 | 1600 | .. | .. | .. | .. | | - | 3 | 166 | 100 | 30 | 24 |
| PMG | 18.6S | 28 | 16-- | .. | .. | .. | .. | 28(8) 29(4,5) | 5 | 9 | 140 | 50 | 30 | 00 |
| HER | 33.7S | 28 | 15-- | .. | .. | .. | .. | 28(8) | 5 | 25 | 104 | 121 | 30 | 02 |
| KGL | 56.5S | 29 | 0544 | SC | 3 | 20 | 4 | 29(7) 30(6) | 6 | 29 | 270 | 240 | 30 | 23 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ABG | ALIBAG | GNA | GNANGARA | HYB | HYDERABAD | SHL | SHILLONG |
| ANN | ANNAMALAINAGAR | GUA | GUAM | IRK | IRKUTSK | SIT | SITKA |
| BJI | BEIJING | HER | HERMANUS | JAI | JAIPUR | TRD | TRIVANDRUM |
| CNB | CANBERRA | HON | HONOLULU | KGL | KERGUELEN | UJJ | UJJAIN |
| COL | COLLEGE | HUA | HUANCAYO | PMG | PORT MORESBY | WIT | WITTEVEEN |
| FRD | FREDERICKSBURG | | | | | | |

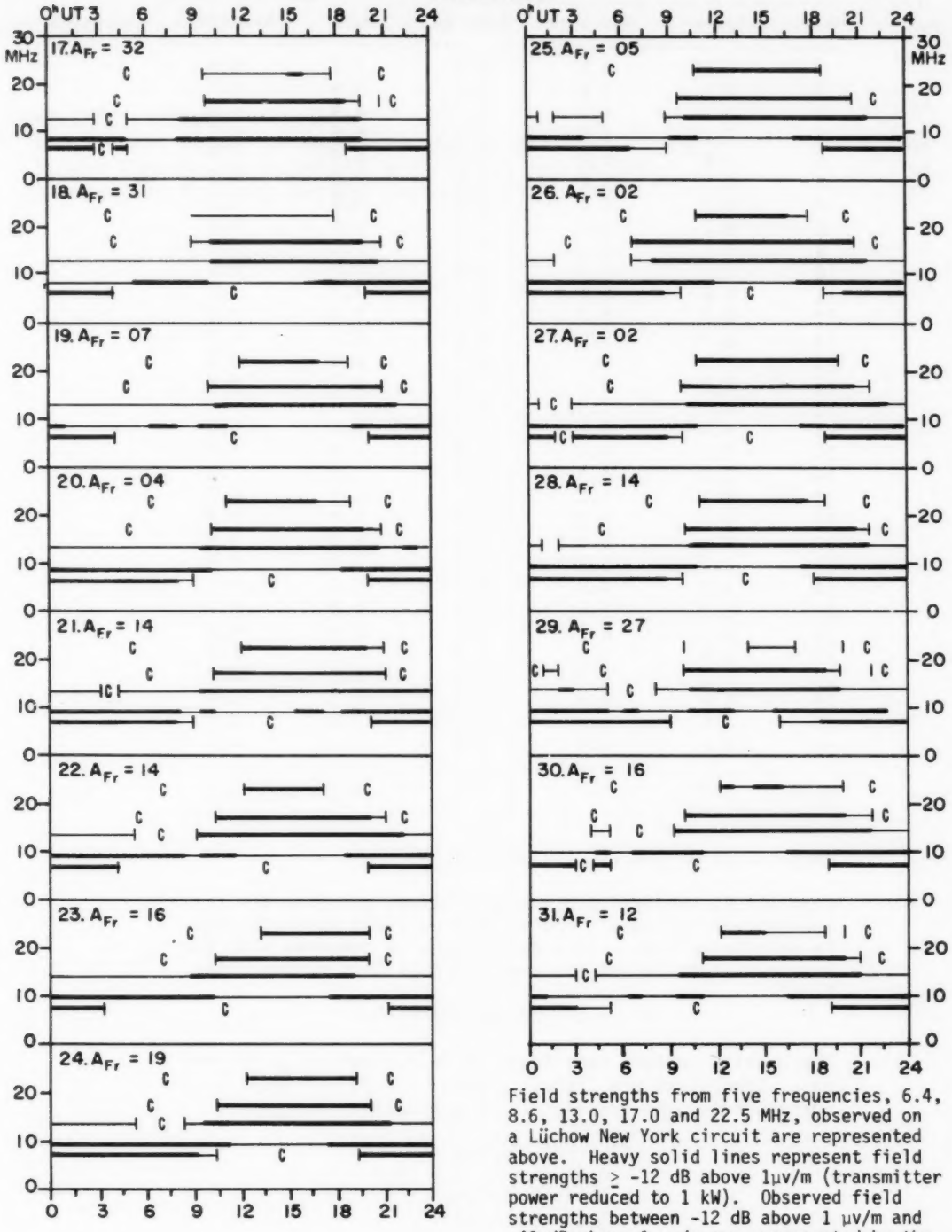
# TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

OCTOBER 1983



# TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

OCTOBER 1983




Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Lüchow New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line.

# RADIO PROPAGATION QUALITY INDICES

OCTOBER 1983

| Day | Tokyo | New York | Teheran | Oslo | Bracknell |
|---|---|---|---|---|---|
| 1 | 6.0 | 6.5 | 6.8 | 6.5 | 6.0 |
| 2 | 4.1 | 2.6 | 3.7 | 3.9 | 3.7 |
| 3 | 6.3 | 5.7 | 4.0 | 4.9 | 4.8 |
| 4 | 6.4 | 5.6 | 3.1 | 5.6 | 4.7 |
| 5 | 6.4 | 5.1 | 6.3 | 6.4 | 4.9 |
| 6 | 6.9 | 6.4 | 5.5 | 7.3 | 5.3 |
| 7 | 6.7 | 5.4 | 6.9 | 8.3 | 4.3 |
| 8 | 6.7 | 6.5 | 7.6 | 7.8 | 5.0 |
| 9 | 6.7 | 6.0 | 7.7 | 7.8 | 5.8 |
| 10 | 8.7 | 5.7 | 8.6 | 8.0 | 6.5 |
| 11 | 8.4 | 5.1 | 7.7 | 7.6 | 7.2 |
| 12 | 9.0 | 5.3 | 9.3 | 9.0 | 6.8 |
| 13 | 8.4 | 7.0 | 6.1 | 6.7 | 6.9 |
| 14 | 5.9 | 5.5 | 4.7 | 6.6 | 4.9 |
| 15 | 5.2 | 4.8 | 5.6 | 5.7 | 4.9 |
| 16 | 6.4 | 7.3 | 6.0 | 6.9 | 5.7 |
| 17 | 5.8 | 6.2 | 4.3 | 4.4 | 6.3 |
| 18 | 5.7 | 4.4 | 2.8 | 3.6 | 5.6 |
| 19 | 5.3 | 4.3 | 4.9 | 3.9 | 3.8 |
| 20 | 5.3 | 4.6 | 4.6 | 4.3 | 4.2 |
| 21 | 6.9 | 6.0 | 5.9 | 6.0 | 5.2 |
| 22 | 6.1 | 5.9 | 5.6 | 5.3 | 3.9 |
| 23 | 6.7 | 5.3 | 6.2 | 4.8 | 4.8 |
| 24 | 6.3 | 4.9 | 4.5 | 5.3 | 4.1 |
| 25 | 6.3 | 5.5 | 5.6 | 4.3 | 4.7 |
| 26 | 6.3 | 8.2 | 5.6 | 6.0 | 4.8 |
| 27 | 5.9 | 8.3 | 6.7 | 4.3 | 6.6 |
| 28 | 6.3 | 5.9 | 5,7 | 4.7 | 4.9 |
| 29 | 3.9 | 6.3 | 2.4 | 4.3 | 4.4 |
| 30 | 4.9 | 5.2 | 4.1 | 3.3 | 4.7 |
| 31 | 4.2 | 4.5 | 4.8 | 3.3 | 4.7 |
| Mean | 6.3 | 5.7 | 5.6 | 5.7 | 5.2 |

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

SCALE FOR QUALITY INDICES

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

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# HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

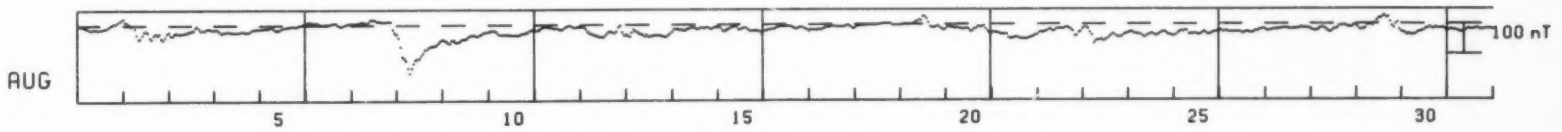
NASA/GODDARD SPACE FLIGHT CENTER

AUGUST 1983

(Time-UT)

(Units-Gammas)

| DAY | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | -3 | -3 | -5 | -8 | -11 | -13 | -16 | -15 | -13 | -14 | -16 | -14 | -14 | -12 | -11 | -8 | -3 | 2 | 5 | 5 | 10 | 15 | 17 | 21 |
| 2 | 11 | 8 | 3 | -4 | 0 | -11 | -32 | -40 | -42 | -31 | -21 | -20 | -24 | -41 | -46 | -33 | -27 | -32 | -47 | -43 | -45 | -38 | -27 | -23 |
| 3 | -34 | -35 | -27 | -26 | -27 | -29 | -26 | -27 | -25 | -23 | -21 | -16 | -17 | -9 | -3 | -11 | -18 | -17 | -17 | -13 | -12 | -15 | -16 | -16 |
| 4 | -13 | -17 | -22 | -26 | -23 | -23 | -22 | -23 | -23 | -24 | -25 | -24 | -23 | -22 | -20 | -22 | -24 | -23 | -21 | -15 | -15 | -15 | -12 | -13 |
| 5 | -12 | -12 | -10 | -11 | -11 | -8 | -15 | -15 | -17 | -16 | -13 | -10 | -9 | -8 | -6 | -5 | -4 | -5 | -6 | -3 | 0 | 0 | 3 | 3 |
| 6 | 8 | 11 | 10 | 6 | 9 | 8 | 4 | 1 | 0 | 2 | 2 | 3 | 3 | 6 | 7 | 5 | 6 | -3 | -5 | 0 | 2 | 4 | 6 | 5 |
| 7 | 6 | 5 | 6 | 7 | 10 | 11 | 9 | 5 | 10 | 17 | 16 | 18 | 14 | 11 | 13 | 10 | 10 | 10 | 11 | 12 | 11 | -14 | -25 | -31 |
| 8 | -42 | -72 | -105 | -110 | -116 | -142 | -160 | -142 | -127 | -115 | -112 | -110 | -101 | -93 | -83 | -80 | -74 | -70 | -69 | -69 | -66 | -60 | -55 | -48 |
| 9 | -50 | -54 | -60 | -61 | -51 | -50 | -56 | -58 | -55 | -49 | -47 | -47 | -43 | -37 | -35 | -35 | -34 | -33 | -30 | -32 | -27 | -25 | -24 | -23 |
| 10 | -20 | -19 | -26 | -23 | -31 | -33 | -34 | -33 | -33 | -34 | -33 | -35 | -35 | -34 | -36 | -34 | -30 | -29 | -25 | -26 | -22 | -16 | -17 | -17 |
| 11 | -20 | -18 | -13 | -10 | -7 | -8 | -10 | -10 | -11 | -13 | -12 | -13 | -16 | -17 | -14 | -10 | -6 | -5 | -4 | -9 | -11 | -9 | -5 | -6 |
| 12 | -9 | -8 | -15 | -23 | -28 | -31 | -34 | -36 | -37 | -41 | -39 | -42 | -37 | -30 | -23 | -22 | -26 | -28 | -22 | -9 | -3 | -25 | -35 | -35 |
| 13 | -36 | -39 | -26 | -16 | -22 | -24 | -36 | -31 | -35 | -36 | -33 | -40 | -37 | -37 | -34 | -35 | -36 | -36 | -35 | -39 | -40 | -36 | -29 | -25 |
| 14 | -15 | -15 | -15 | -17 | -18 | -19 | -19 | -14 | -13 | -11 | -11 | -12 | -16 | -14 | -11 | -11 | -13 | -10 | -11 | -14 | -14 | -11 | -9 | -9 |
| 15 | -9 | -15 | -22 | -22 | -17 | -14 | -12 | -8 | -7 | -9 | -17 | -16 | -13 | -12 | -11 | -17 | -21 | -22 | -21 | -20 | -21 | -23 | -23 | -23 |
| 16 | -20 | -19 | -17 | -17 | -15 | -15 | -12 | -9 | -6 | -6 | -7 | -7 | -6 | -5 | -6 | -12 | -14 | -13 | -10 | -10 | -10 | -14 | -17 | -22 |
| 17 | -17 | -17 | -18 | -19 | -16 | -18 | -16 | -13 | -10 | -10 | -6 | -6 | -6 | -8 | -9 | -9 | -8 | -9 | -7 | -3 | -5 | -9 | -14 | -12 |
| 18 | -7 | -4 | -3 | -4 | -4 | -2 | -3 | -2 | -1 | -1 | -1 | -1 | 0 | 2 | 3 | 3 | 2 | 3 | 6 | -2 | -3 | -2 | -2 | -3 |
| 19 | -2 | 0 | 2 | 1 | 0 | 1 | 3 | 7 | 10 | 14 | 12 | 25 | 25 | 17 | 5 | -9 | -11 | -12 | -6 | -5 | -12 | -15 | -19 | -16 |
| 20 | -9 | -9 | -11 | -11 | -14 | -11 | -13 | -14 | -16 | -16 | -13 | -16 | -24 | -23 | -16 | -14 | -9 | -10 | -10 | -6 | -16 | -23 | -29 | -30 |
| 21 | -26 | -28 | -26 | -30 | -33 | -33 | -33 | -34 | -45 | -48 | -46 | -45 | -42 | -44 | -48 | -46 | -49 | -49 | -47 | -44 | -42 | -33 | -33 | -33 |
| 22 | -27 | -25 | -26 | -24 | -23 | -18 | -17 | -24 | -22 | -16 | -16 | -14 | -16 | -16 | -12 | -12 | -15 | -19 | -24 | -33 | -36 | -26 | -25 | -16 |
| 23 | -11 | -11 | -16 | -26 | -37 | -64 | -57 | -53 | -54 | -49 | -57 | -53 | -49 | -43 | -38 | -32 | -30 | -42 | -41 | -44 | -40 | -35 | -31 | -30 |
| 24 | -27 | -25 | -30 | -33 | -33 | -34 | -36 | -41 | -44 | -39 | -36 | -33 | -32 | -37 | -36 | -36 | -30 | -27 | -25 | -28 | -35 | -36 | -37 | -39 |
| 25 | -37 | -32 | -26 | -22 | -25 | -20 | -23 | -34 | -32 | -33 | -31 | -33 | -35 | -34 | -30 | -25 | -29 | -33 | -34 | -30 | -27 | -26 | -24 | -26 |
| 26 | -20 | -26 | -24 | -23 | -26 | -26 | -27 | -27 | -25 | -25 | -27 | -31 | -29 | -26 | -23 | -23 | -30 | -27 | -22 | -24 | -19 | -17 | -16 | -16 |
| 27 | -23 | -23 | -21 | -16 | -18 | -17 | -16 | -16 | -15 | -13 | -14 | -15 | -17 | -16 | -16 | -17 | -15 | -15 | -14 | -13 | -14 | -15 | -15 | -16 |
| 28 | -21 | -23 | -23 | -20 | -14 | -12 | -14 | -18 | -24 | -26 | -25 | -16 | -17 | -14 | -7 | -6 | -4 | -6 | -7 | -12 | -11 | -11 | -4 | -6 |
| 29 | -12 | -19 | -20 | -19 | -15 | -6 | -3 | -4 | -7 | 0 | 11 | 17 | 16 | 22 | 27 | 16 | 22 | 6 | -9 | -14 | -1 | 5 | -20 | -27 |
| 30 | -26 | -31 | -37 | -32 | -37 | -36 | -36 | -32 | -26 | -26 | -23 | -21 | -16 | -14 | -11 | -15 | -17 | -12 | -15 | -14 | -14 | -15 | -19 | -27 |
| 31 | -21 | -18 | -21 | -20 | -23 | -24 | -26 | -27 | -26 | -21 | -17 | -17 | -19 | -18 | -16 | -13 | -19 | -20 | -19 | -17 | -16 | -17 | -17 | -15 |



# SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

## AUGUST 1983

## PRELIMINARY REPORT ON RAPID VARIATIONS

### Sudden Commencements (ssc)

| | | | |
|---|---|---|---|
| 07 | 08 | 27 | A:DOM COI; B: SOD WNG MMB FRD KAK KNY MPO CAA KGL ;C: WIT NGK HAD BDV CLF GCK AQU SPT LNP AMS CZT DUM |
| 19 | 11 | 01 | B: WNG BDV AQU LNP CAA ; C: WIT NGK VAL HAD CLF GCK SPT AMS CZT KGL DUM |

### Solar Flare Effects (sfe)

| | | | | | | |
|---|---|---|---|---|---|---|
| 01 | 12 | 28 | - | 12 | 37 | BDV |
| 02 | 04 | 10 | - | 04 | 15 | LNP |
| 02 | 11 | 12 | - | 11 | 39 | SPT |
| 03 | 04 | 06 | - | 04 | 13 | CLF (ssc:A:COI) |
| 03 | 07 | 44 | - | 07 | 52 | SOD |
| 04 | 03 | 41 | - | 04 | 05 | MMB KAK KNY LNP |
| 06 | 13 | 23 | - | 13 | 34 | CLF SPT |
| 09 | 13 | 01 | - | 13 | 09 | CLF |
| 11 | 10 | 21 | - | 10 | 30 | NGK BDV |
| 12 | 04 | 12 | - | 04 | 43 | NGK |
| 12 | 05 | 48 | - | 06 | 00 | LNP |
| 12 | 12 | 37 | - | 13 | 00 | BDV |
| 17 | 02 | 32 | - | 02 | 34 | LNP |
| 19 | 03 | 07 | - | 03 | 12 | LNP |

Reporting observatories:

SOD DOM NUR WNG WIT NGK VAL HAD BDV CLF
GCK MMB AQU EBR COI SPT FRD KAK KNY LNP
MPO GNA AMS CZT KGL DUM

PLEASE PAY ATTENTION TO
THE REVISION OF AA-INDICES
FOR JULY 1983

P.T.O.

# GEOMAGNETIC ACTIVITY INDICES

September 1983

| Day | | Kp Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Sum | Ap | Cp | Km Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Am | N | aa Provisional S | M | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 4+ | 5- | 2- | 3- | 2+ | 2+ | 3 | 3- | 24- | 17 | 0.9 | 4 | 4+ | 2- | 2+ | 2 | 2 | 3- | 3- | 29 | 29 | 22 | 29 | 22 | |
| 2 | Q8 | 2 | 2- | 1+ | 1+ | 1 | 2 | 2 | 2+ | 14- | 6 | 0.3 | 2 | 2 | 1+ | 1+ | 1- | 2 | 2- | 2+ | 12 | 14 | 11 | 10 | 15 | C |
| 3 | Q6 | 2 | 2+ | 2+ | 1- | 1+ | 1+ | 1 | 0+ | 11+ | 6 | 0.2 | 2 | 2 | 2+ | 1- | 1 | 2 | 1+ | 0+ | 11 | 12 | 8 | 11 | 9 | CC |
| 4 | Q2 | 1- | 0 | 0+ | 1- | 0+ | 0+ | 1+ | 2- | 5+ | 3 | 0.1 | 0+ | 0 | 1- | 0+ | 0+ | 1- | 1+ | 2- | 5 | 8 | 5 | 4 | 9 | CC |
| 5 | Q3 | 2- | 0+ | 0 | 0 | 1 | 1 | 1+ | 2- | 7 | 3 | 0.1 | 2- | 0+ | 0 | 0 | 1- | 1- | 1+ | 2- | 5 | 9 | 4 | 5 | 8 | CC |
| 6 | Q5 | 2 | 2 | 1 | 1 | 1 | 1+ | 2- | 2- | 12- | 5 | 0.2 | 2 | 2 | 2- | 1 | 1 | 1 | 2- | 1+ | 11 | 13 | 7 | 9 | 11 | CC |
| 7 | | 2- | 2 | 2 | 4- | 4+ | 5+ | 4 | 3 | 26 | 22 | 1.1 | 1+ | 2 | 2+ | 3 | 4- | 4 | 3+ | 3- | 30 | 46 | 24 | 19 | 52 | |
| 8 | | 2+ | 2 | 4- | 4- | 3+ | 3- | 3+ | 3- | 24- | 15 | 0.8 | 2- | 2- | 3+ | 4 | 3 | 3- | 3 | 3- | 28 | 29 | 21 | 23 | 28 | |
| 9 | Q9A | 3 | 3- | 2+ | 3 | 3 | 3 | 4 | 4- | 25- | 16 | 0.9 | 3 | 3- | 2+ | 2+ | 2+ | 3- | 3+ | 3 | 25 | 31 | 23 | 24 | 31 | |
| 10 | | 3+ | 2 | 2 | 3- | 2+ | 3- | 3+ | 2+ | 21- | 12 | 0.7 | 3 | 2 | 2 | 2 | 2- | 3 | 3 | 2+ | 20 | 24 | 18 | 18 | 25 | |
| 11 | | 3+ | 2 | 2 | 3- | 3- | 3- | 4- | 2+ | 21+ | 12 | 0.7 | 3- | 2 | 2- | 2+ | 2+ | 3- | 3 | 2 | 20 | 27 | 16 | 19 | 25 | |
| 12 | | 2+ | 3 | 3+ | 3+ | 4- | 1 | 2- | 2+ | 21- | 13 | 0.7 | 2+ | 3 | 3+ | 3+ | 4- | 1+ | 1+ | 2 | 25 | 21 | 25 | 25 | 21 | |
| 13 | Q9A | 3- | 2- | 2 | 1+ | 2+ | 2- | 1 | 2+ | 15 | 7 | 0.4 | 3- | 2- | 2 | 2- | 3 | 2 | 1+ | 3 | 18 | 14 | 16 | 13 | 18 | |
| 14 | Q7 | 2 | 1+ | 2 | 1 | 1+ | 2+ | 2- | 2 | 14- | 6 | 0.3 | 1+ | 1+ | 2- | 1- | 1+ | 3- | 1+ | 2 | 11 | 17 | 12 | 11 | 19 | |
| 15 | | 3+ | 2 | 3 | 3- | 2 | 5- | 5- | 4+ | 27- | 21 | 1.1 | 3 | 2 | 3 | 3 | 2+ | 5- | 4+ | 4- | 39 | 39 | 39 | 23 | 55 | |
| 16 | D4 | 3- | 4 | 4+ | 4- | 4 | 5- | 4 | 3+ | 31- | 26 | 1.2 | 3- | 3+ | 4- | 4+ | 4 | 4+ | 4- | 3 | 46 | 31 | 47 | 37 | 41 | |
| 17 | D5 | 4 | 5+ | 5 | 4- | 2 | 3+ | 3- | 3- | 29- | 25 | 1.2 | 4- | 4 | 4 | 4- | 2 | 3+ | 3- | 2+ | 37 | 43 | 33 | 51 | 25 | |
| 18 | | 3 | 3- | 2+ | 2- | 2 | 2+ | 3 | 3+ | 20+ | 11 | 0.7 | 3- | 2 | 2 | 2- | 1+ | 2 | 3 | 3 | 19 | 27 | 16 | 16 | 28 | |
| 19 | D1 | 5- | 5 | 4 | 5- | 5 | 5- | 6+ | 6+ | 41- | 54 | 1.6 | 4 | 4+ | 4- | 4- | 4 | 4+ | 5 | 5+ | 67 | 76 | 50 | 36 | 91 | |
| 20 | | 4+ | 4+ | 3+ | 3+ | 4 | 4 | 3- | 2+ | 28+ | 22 | 1.1 | 4- | 4- | 3 | 3+ | 4 | 3+ | 3- | 2 | 36 | 40 | 28 | 33 | 36 | |
| 21 | | 3+ | 3- | 3+ | 1+ | 2+ | 3- | 1+ | 2+ | 19+ | 11 | 0.6 | 3- | 2 | 3- | 2- | 3 | 3- | 2- | 3- | 21 | 23 | 18 | 18 | 24 | |
| 22 | | 3+ | 3- | 3+ | 4+ | 2 | 2- | 1 | 2 | 20+ | 13 | 0.7 | 3- | 3- | 3 | 3+ | 2+ | 1+ | 1+ | 2 | 21 | 24 | 21 | 31 | 14 | |
| 23 | Q4 | 1 | 1 | 0+ | 1+ | 2- | 1+ | 1- | 1 | 8+ | 4 | 0.1 | 1- | 1 | 0+ | 2- | 2- | 1+ | 1 | 1+ | 7 | 9 | 8 | 7 | 11 | CC |
| 24 | | 3 | 1+ | 1 | 2- | 3- | 3 | 2- | 2+ | 17- | 9 | 0.5 | 2+ | 1 | 1 | 2- | 3 | 3- | 1+ | 2+ | 16 | 18 | 20 | 14 | 24 | |
| 25 | D2 | 5- | 4+ | 4- | 3+ | 4+ | 5+ | 5- | 4 | 34+ | 33 | 1.3 | 4 | 3 | 3 | 3 | 3+ | 5- | 4- | 4 | 46 | 62 | 36 | 36 | 62 | |
| 26 | D3 | 5 | 5+ | 5- | 4+ | 3+ | 2 | 2+ | 3- | 30- | 28 | 1.2 | 4 | 5- | 5- | 3+ | 3+ | 2+ | 2+ | 2+ | 42 | 40 | 43 | 58 | 25 | |
| 27 | | 4 | 2+ | 2+ | 3- | 3- | 2 | 2 | 4- | 22- | 13 | 0.8 | 4- | 2 | 2+ | 2+ | 3- | 2 | 2+ | 3 | 23 | 23 | 17 | 18 | 23 | |
| 28 | | 4 | 3 | 1- | 1+ | 2+ | 2+ | 2 | 2+ | 18 | 10 | 0.6 | 4 | 2+ | 1 | 1 | 3- | 3- | 2- | 3- | 21 | 23 | 17 | 20 | 21 | |
| 29 | Q10A | 4- | 3+ | 1 | 2 | 1- | 1- | 1+ | 1+ | 14 | 8 | 0.5 | 3- | 3 | 1 | 2+ | 1- | 1- | 1 | 1+ | 14 | 13 | 10 | 16 | 7 | CK |
| 30 | Q1 | 1- | 0 | 0+ | 1- | 1 | 0+ | 1- | 1+ | 5 | 3 | 0.0 | 1 | 0 | 0+ | 1 | 1 | 0+ | 1- | 2- | 5 | 7 | 5 | 4 | 8 | CC |
| Mean | | | | | | | | | | | 14 | 0.69 | | | | | | | | | 23.7 | 26.4 | 20.8 | 23.7 | | |

| Day | Kn Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | An | Ks Three-Hourly Indices 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | As | $S_a$ | Prov $R_I$ | $R_a$ | $R_s$ | IMF | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 4 | 2- | 2+ | 2 | 2+ | 3- | 3 | 30 | 4 | 4+ | 2- | 2 | 2 | 2- | 2+ | 3- | 27 | 110.5* | 46 | 42 | 57 | T | - |
| 2 | 2 | 2- | 1+ | 2- | 1- | 2+ | 2 | 3- | 14 | 2+ | 2 | 1- | 1- | 1- | 2- | 2- | 2- | 10 | 110.9 | 56 | 46 | 58 | T | - |
| 3 | 2- | 2+ | 3- | 1 | 2- | 2 | 1+ | 1 | 13 | 2+ | 1+ | 2 | 0 | 0+ | 2- | 1 | 0 | 8 | 106.4 | 59 | 56 | 53 | T | - |
| 4 | 0+ | 0 | 1- | 1- | 0+ | 1- | 1+ | 2 | 5 | 1- | 0 | 1- | 0+ | 0 | 0+ | 1 | 2- | 4 | 110.5 | 69 | 64 | 57 | T | - |
| 5 | 2- | 0+ | 0 | 0 | 1 | 1+ | 2- | 2 | 7 | 1+ | 1- | 0 | 0 | 0+ | 0 | 1 | 1+ | 4 | 117.6 | 81 | 83 | 65 | T | - |
| 6 | 2 | 2 | 1 | 1 | 1+ | 1+ | 2 | 1+ | 11 | 2+ | 2+ | 2 | 1- | 1 | 1- | 1+ | 1+ | 10 | 120.7 | 78 | 79 | 68 | T | - |
| 7 | 1+ | 2 | 2+ | 3+ | 4 | 5- | 4- | 3- | 36 | 1 | 2 | 2 | 3- | 4- | 3+ | 3 | 3- | 24 | 118.6 | 72 | 72 | 66 | A | - |
| 8 | 2- | 1 | 4- | 4+ | 3+ | 3- | 3+ | 3 | 32 | 2 | 2 | 3+ | 3+ | 3 | 2+ | 2+ | 2+ | 23 | 118.5 | 72 | 67 | 66 | AT | - |
| 9 | 3- | 3- | 2+ | 2+ | 3- | 3 | 3+ | 3+ | 26 | 4- | 3 | 2 | 2 | 2 | 2 | 3+ | 3 | 24 | 115.3 | 74 | 64 | 63 | T | - |
| 10 | 3- | 2 | 2+ | 2 | 2 | 3+ | 3 | 2+ | 21 | 3+ | 2 | 2- | 2- | 2- | 3- | 3 | 2+ | 20 | 109.7 | 77 | 67 | 56 | T | - |
| 11 | 3 | 2- | 2- | 2+ | 3- | 3 | 3 | 2 | 21 | 3- | 2 | 2- | 2 | 2 | 3- | 3 | 2 | 19 | 110.5 | 65 | 45 | 57 | T | - |
| 12 | 2+ | 3 | 4- | 3+ | 4 | 2- | 1+ | 2 | 28 | 2 | 3 | 3+ | 3+ | 3+ | 1+ | 1 | 2 | 23 | 104.9* | 41 | 33 | 51 | A | - |
| 13 | 3- | 2- | 2 | 2- | 3 | 2+ | 1+ | 2+ | 17 | 3- | 2- | 2 | 1+ | 3 | 2- | 1+ | 3+ | 18 | 104.4 | 36 | 36 | 51 | AT | - |
| 14 | 1+ | 1+ | 2- | 1- | 1+ | 3- | 2- | 2+ | 12 | 2- | 1+ | 2- | 1 | 1+ | 3- | 1+ | 2- | 11 | 105.3 | 36 | 31 | 52 | T | - |
| 15 | 3 | 2 | 3 | 3 | 2+ | 4+ | 5- | 4 | 40 | 3 | 2 | 3 | 3 | 2 | 5- | 4 | 4- | 37 | 106.3* | 42 | 35 | 53 | AT | - |
| 16 | 3- | 3+ | 4- | 4+ | 5- | 5- | 4 | 3 | 52 | 3- | 3+ | 4- | 4 | 4- | 4 | 3 | 3 | 41 | 106.3* | 38 | 34 | 53 | A | - |
| 17 | 4- | 4+ | 4+ | 4- | 2 | 4- | 3- | 3- | 40 | 3+ | 4 | 4 | 4- | 2 | 3 | 2+ | 2- | 33 | 105.1 | 35 | 34 | 52 | A | - |
| 18 | 3- | 2+ | 2+ | 2- | 2- | 2+ | 3 | 3 | 20 | 3- | 2 | 2 | 2- | 1+ | 2- | 3 | 3- | 18 | 102.5 | 45 | 45 | 49 | A | - |
| 19 | 4 | 4 | 4- | 4 | 4+ | 5- | 5 | 5+ | 71 | 4 | 4+ | 3+ | 4- | 4- | 4- | 5 | 5+ | 64 | 101.2 | 40 | 36 | 47 | A | - |
| 20 | 4- | 4- | 3 | 3+ | 4+ | 4- | 3 | 2+ | 41 | 4- | 3+ | 3 | 3 | 3+ | 3+ | 2 | 2- | 30 | 100.4 | 32 | 31 | 46 | AT | - |
| 21 | 3 | 2 | 3- | 1+ | 3 | 3 | 2- | 3- | 22 | 3- | 2+ | 3 | 2 | 3 | 3- | 1+ | 3- | 20 | 103.0 | 38 | 34 | 49 | A | - |
| 22 | 3 | 3- | 3 | 4- | 2 | 1+ | 1+ | 2+ | 22 | 3- | 3- | 3 | 3+ | 2+ | 1 | 1 | 2- | 20 | 106.0 | 38 | 40 | 52 | AT | - |
| 23 | 1- | 1 | 0 | 2- | 2- | 1+ | 1 | 1 | 7 | 0+ | 1 | 1 | 2- | 1+ | 1+ | 1 | 1+ | 8 | 112.6 | 42 | 44 | 60 | T | - |
| 24 | 3- | 1- | 1+ | 2- | 3- | 3 | 2- | 2+ | 16 | 2 | 1+ | 1 | 2- | 3+ | 3- | 1+ | 2 | 16 | 111.8 | 46 | 37 | 59 | AT | - |
| 25 | 4- | 3+ | 3+ | 3 | 3+ | 5- | 4 | 4- | 46 | 5- | 3 | 3 | 3 | 4- | 4+ | 4- | 4+ | 47 | 110.5* | 45 | 39 | 57 | T | - |
| 26 | 4 | 5- | 5- | 3+ | 3+ | 2+ | 2+ | 2+ | 42 | 4- | 5- | 4+ | 4- | 3+ | 2+ | 2+ | 3- | 42 | 114.6* | 50 | 45 | 62 | T | - |
| 27 | 3+ | 2 | 2+ | 2+ | 3- | 2 | 2+ | 3 | 23 | 4- | 2 | 2+ | 2 | 3- | 2 | 2 | 3 | 23 | 119.8 | 46 | 53 | 67 | T | - |
| 28 | 4- | 2+ | 1 | 1 | 3- | 3- | 2- | 2+ | 19 | 4+ | 2+ | 1 | 1 | 3 | 3- | 2- | 3 | 23 | 114.8 | 48 | 51 | 62 | T | - |
| 29 | 3 | 3 | 1+ | 2+ | 1- | 1+ | 1+ | 2- | 15 | 2+ | 3 | 1- | 2+ | 1 | 0+ | 1 | 1+ | 13 | 114.5 | 48 | 45 | 62 | - | - |
| 30 | 1- | 0 | 0+ | 1 | 1+ | 0+ | 1 | 1+ | 5 | 1 | 0 | 0 | 1 | 1- | 0 | 0 | 2 | 4 | 113.0* | 33 | 33 | 60 | - | - |
| Mean | | | | | | | | | 25.1 | | | | | | | | | 22.1 | 110.2 | 50.9 | 47.4 | 57.0 | | |

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# DATA ANNOUNCEMENT

Dec. 1983

## AURORAS AND OTHER LIGHTS VIEWED FROM SPACE

### UNIQUE BLACK AND WHITE 35-MM SLIDES OF THE AURORA

The National Geophysical Data Center offers a set of 52 slides illustrating auroral variability and other nocturnal lights viewed from space. Each frame was prepared with no retouching from an extensive 35-mm archive of satellite auroral imagery—nighttime images taken between 1973 and 1977 by several U.S. Air Force weather satellites.

A line scanner system, sensitive to wavelengths between 0.4 and 1.2 microns, recorded each image as a series of parallel rectangular strips; on the Earth's surface, these strips measured about 3 by 3000 kilometers. The scanner maintained a spatial resolution of 3 kilometers square in darkness, as it recorded detailed auroral structures; moonlit clouds, pack ice, and snow fields; and even the outlines of countries traced by city lights.

### AN ORGANIZED SLIDE SET WITH CAPTIONS

The 52 slides are organized into four groups, and Northern Hemisphere as well as Southern Hemisphere auroras are included. Some views show from one-half to three-fourths of the oval-shaped band along which displays most frequently occur.

A. Frames 1-9 introduce the instrument, the satellites, and the repetitive chain of activity called an "auroral substorm."

B. Frames 10-22 capture different phases of the auroral substorm.

C. Frames 23-46 illustrate unusual auroral structures observed during different substorm phases.

D. Frames 47-52 show other sources of nighttime luminescence such as city lights, lightning strokes, fires of slash and burn agriculture, and atmospheric heating by the natural gas flares of oil refineries.

Each slide has a caption that identifies the date and time, the auroral feature, the geographic area covered, and the level of auroral and magnetic activity.

No photography from the ground rivals these striking satellite views of the aurora's distribution; no photography from the ground reveals as clearly, with patterns of city lights, the aurora's geographic position.

The complete set of 52 slides sells for $100. If sold by the groups described above, then the charge is $20 for group A, $30 for B, $50 for C, and $15 for D.

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